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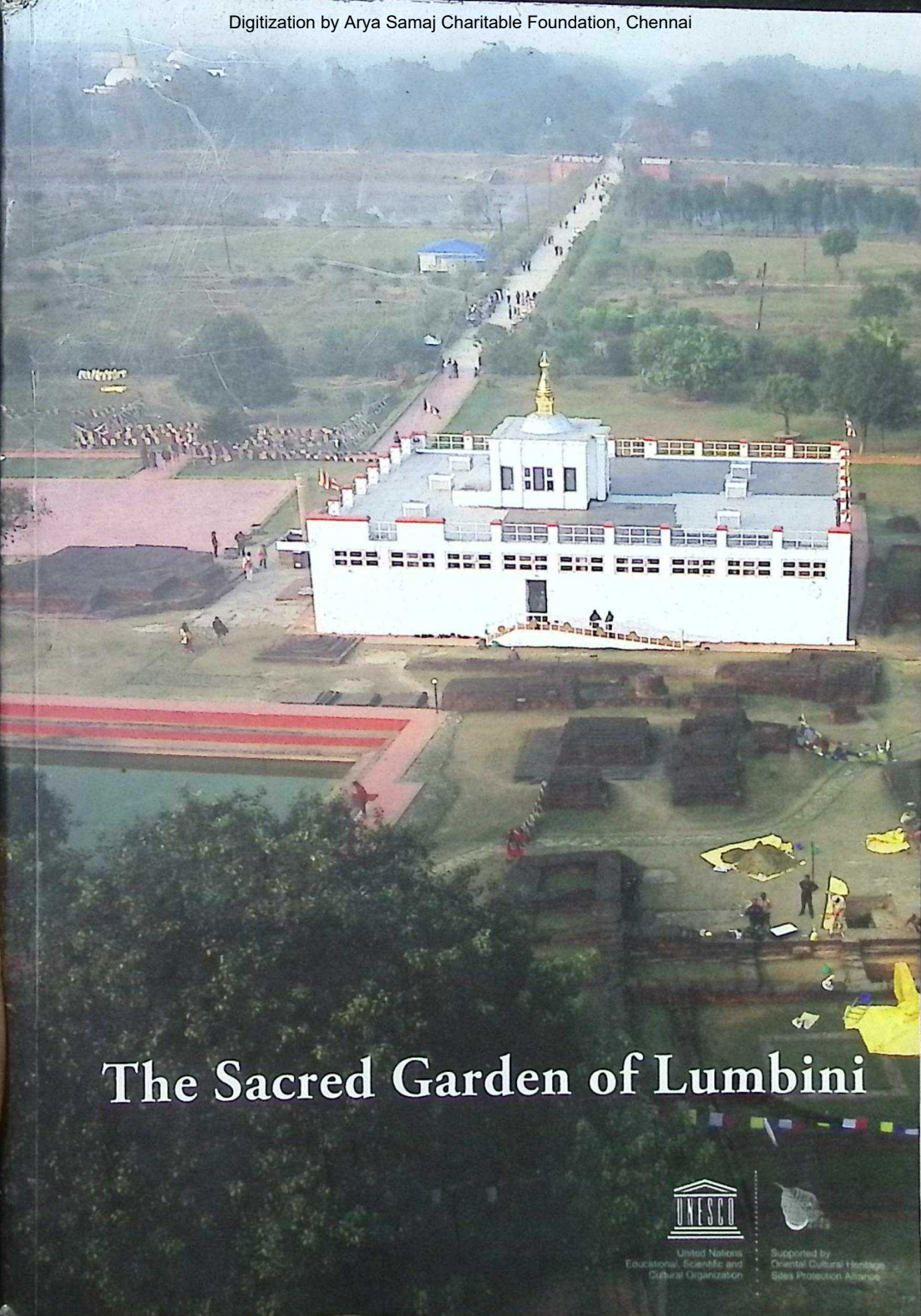

The Sacred Garden of Lumbini

United Nations Educational, Scientific and Cultural Organization

Supported by Oriental Cultural Heritage Sites Protection Alliance

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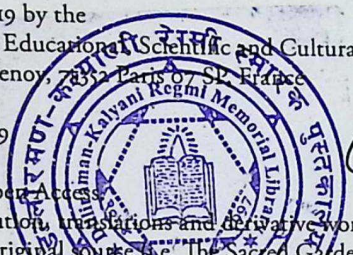

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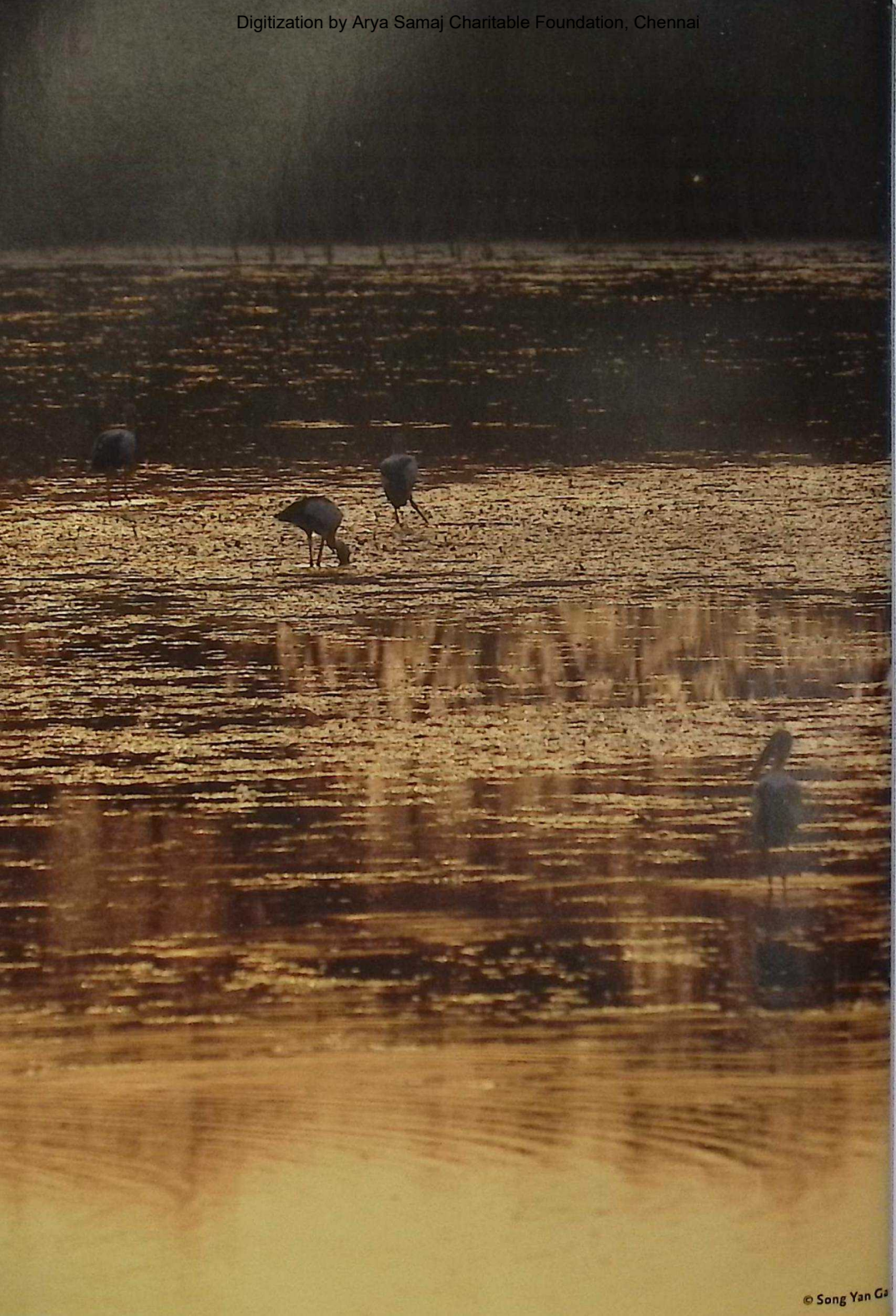

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Table of Contents

	9	Foreword
CHAPTER ONE	13	Lumbini in early Buddhist literature
CHAPTER TWO	35	Historical texts and early visitors to Lumbini
CHAPTER THREE	51	Archaeology and site interpretation
CHAPTER FOUR	105	The Kenzo Tange Master Plan
CHAPTER FIVE	133	Lumbini as a World Heritage Property
CHAPTER SIX	149	Sacred landscape at risk: the environment of Lumbini
	151	Botany and the Buddha: the plants of Lumbini
	173	Birds and wildlife of the Lumbini Area
	193	Saving the Sarus: preserving the Lumbini Crane Sanctuary
	203	A cloud over Lumbini
CHAPTER SEVEN	211	Balancing competing requirements of faith and preservation
CHAPTER EIGHT	225	Sites of the Greater Lumbini Area
	261	Bibliography
	271	Endnotes

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Foreword

Lumbini, the birthplace of Siddhartha Gautama, the Buddha, is a site of outstanding universal value. The spiritual significance and archaeological remains, and the fact that it has been a holy pilgrimage site for thousands of years, highlight Lumbini's global importance, which led to its inscription as a UNESCO World Heritage Site in 1997.

The Greater Lumbini Area is also home to more than 200 other historical Buddhist sites, which bear testimony to a rich spiritual and cultural life since ancient times.

This second edition covers updated contributions by many experts on Buddhist texts, archaeology, the Master Plan of Lumbini, environmental issues, as well as planning for visitors and pilgrims. We have harmonized this edition to avoid duplication and included additional chapters on botany, wildlife, preserving the Sarus crane and added information on other significant sites in the Greater Lumbini Area. We are indebted to all those who have provided valuable contributions to this book.

Recent archaeological excavations within the Sacred Garden of Lumbini were carried out under a UNESCO project, funded by the Japanese Government. A team comprised of members from Durham University, Nepal's Department of Archaeology and the Lumbini Development Trust revealed the presence of the earliest Buddhist shrine dating back to Buddha's lifetime in the sixth century BCE.

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Similarly, non-intrusive geophysical surveys and excavations at Tilaurakot-Kapilavastu revealed the original street grid of the ancient city, and discovered the remains of a palatial walled complex and several monasteries. Archaeological risk maps for the Sacred Garden of Lumbini and the ancient city of Kapilavastu-Tilaurakot were prepared, which will assist in planning for physical infrastructure and development. Mapping of 235 heritage sites within the area indicate that the two main centres, Lumbini and Tilaurakot-Kapilavastu, are linked to a network of many other historical sites.

These archaeological investigations provide new and fascinating insights into ancient life and religious practice. It is therefore imperative to protect this rich heritage and ensure that future generations will also be able to experience this ancient religious and historical legacy.

However, in recent years, population growth, along with rapid industrial progression pose increasing threats to the archaeological and religious sites. The numbers of visitors to Lumbini have steadily increased over the years, and will further rise with the Bhairawaha International Airport coming into operation.

In line with a resolution of the International Buddhist Conference in November 2014, UNESCO contributes to coordination by providing a platform for all concerned stakeholders. This is done through the International Scientific Committee on Lumbini to ensure that the various human and conservation needs are not in conflict but develop in harmony.

This publication will appeal to those who are interested in early Buddhist sites as well as religious and cultural visitors.

I would like to extend my sincere gratitude to the Government of Japan and the Oriental Cultural Heritage Sites Protection Alliance for their generous support which has made both our work in the Lumbini area and this book's publication possible.

Christian Manhart
UNESCO Representative to Nepal

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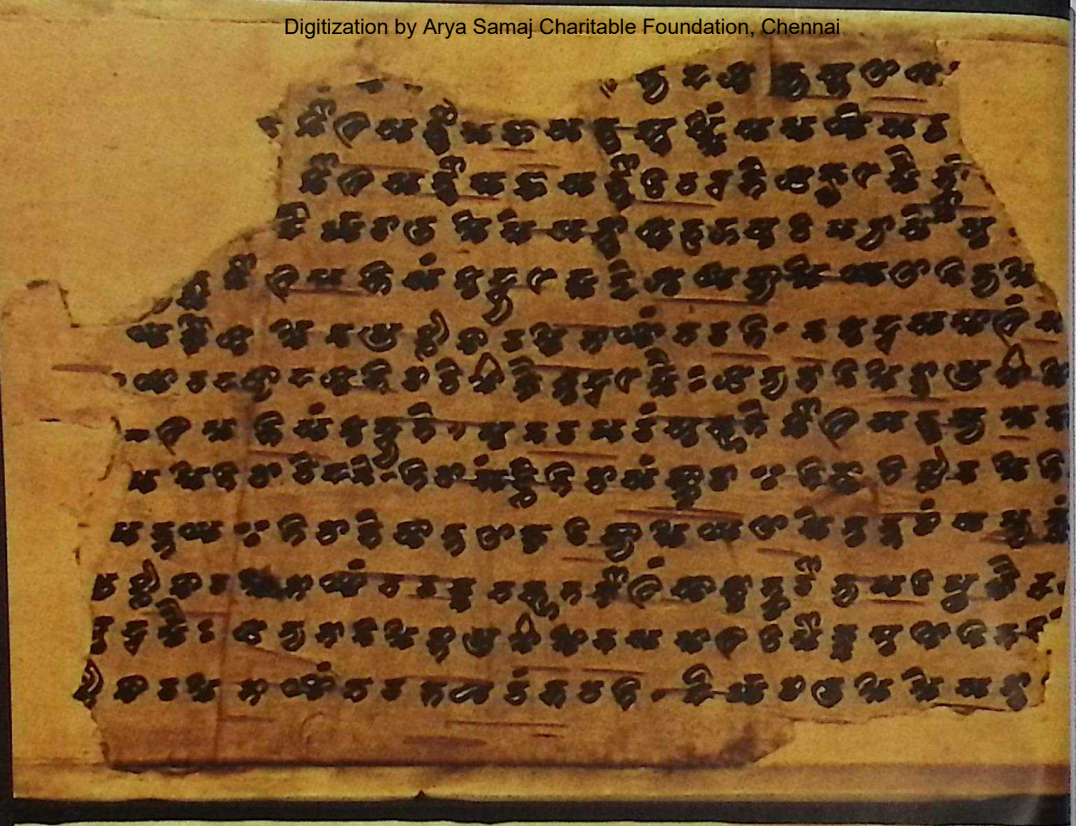

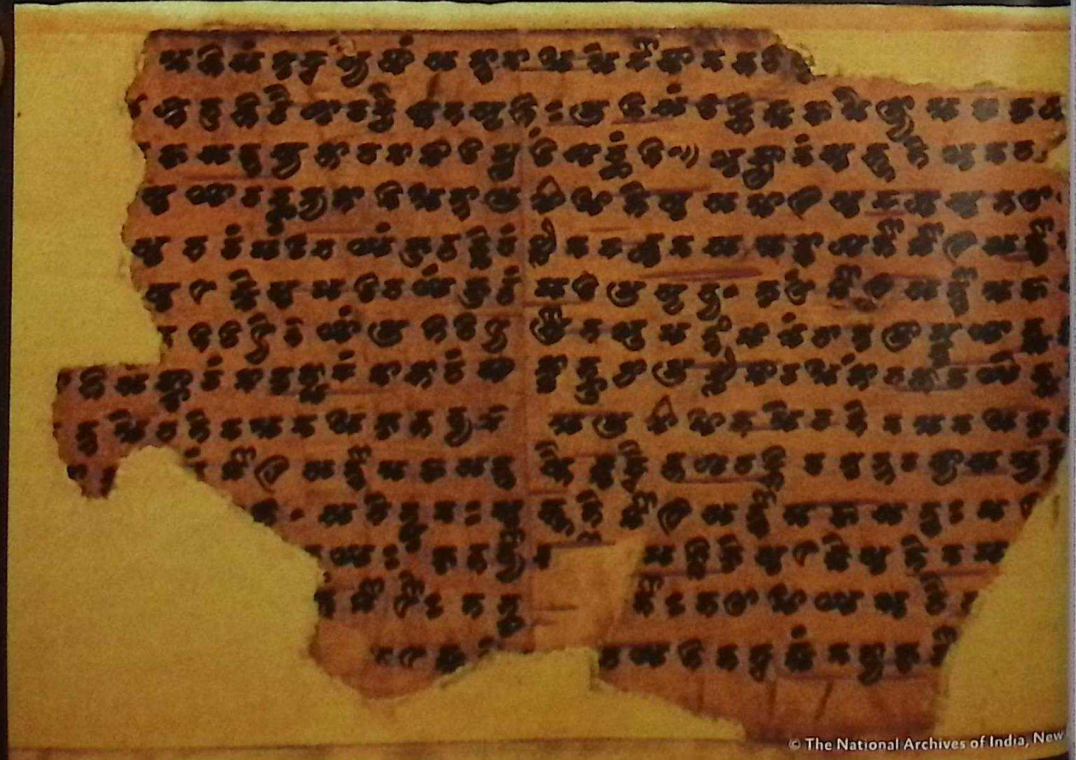

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CHAPTER ONE

Lumbini in early Buddhist literature

Christoph Cüppers

Gilgit manuscripts, Mahāyāna texts written on birch bark[1]

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"Here the Venerable One has been born"

At the age of 80, before the Venerable Buddha passed away in Kushinagara, he said to his faithful disciples:

> "There are, O monks, four places on earth which a believing householder's son or a believing householder's daughter should commemorate as long as they live.
>
> Which are those four?
>
> Here the Venerable One has been born –
>
> here the Venerable One has attained the unsurpassable complete enlightenment –
>
> here the Venerable One has turned the threefold-turning, twelve-spoked lawful wheel –
>
> here the Venerable One has gone to the realm of complete nirvāṇa.
>
> After my death, O monks, there (people) will come to circumambulate (my) caityas, venerate (my) caityas, saying: "Here the Venerable One has been born – here the Venerable One has attained the unsurpassable complete enlightenment – here the Venerable One has turned the threefold, twelve-spoked lawful wheel – here the Venerable One has gone to the realm of complete nirvāṇa." Whoever (of these) fully appeased with regard to me dies here – all those will go to heaven with a rest (of karmic substance)"[2]

From the sources above, it appears that the concept of Lumbini as the birth place of Lord Buddha was established during the formation of Buddhist canonical literature. It developed from the notion of a simple forest or garden to a celestial place as depicted in the late sūtras. From the above information, we must conclude that a more precise picture of Lumbini has to be provided by archaeological research in and around Lumbini. It is not a surprise that Kenzo Tange left the core of the Sacred Garden area out of his Master Plan design. Instead, he pointed out that the design of the Sacred Garden should only be carried out after the archaeological

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excavations were completed. The Sacred Garden would be an area which represents the scene of Lord Buddha's birthplace and in which all the archaeological remains of the site would be integrated into the pilgrims' Pradakshina Walk. This approach would fulfil the aspiration of all pilgrims who come to Lumbini for worship, to a place which Lord Buddha himself designated as a sacred site.

Interpretation of Buddhist literature

The Buddhist texts were first written in Pali in the first century BCE and others followed in Sanskrit and Tibetan and in Chinese translations. Through the centuries, further commentaries and embellishments were added. In various texts compiled throughout the long history of Buddhism, Lumbini is described, interpreted and projected. These texts give a sense of what Lumbini is considered to be from the Buddhist perspective.

Anecdotes about the life of Lord Buddha are very old and as numerous as Buddhist traditions themselves. From the South-Asian records, we know that the biography of Lord Buddha was constantly developed following his physical death, his *parinirvāṇa*. As so often in the case of founders of religions, contemporaneous material would have been sufficient for the first few generations, who still may have preserved some direct memory of the great master. The communities of followers that came later require a complete and more or less well-organized vita of their venerated founder. As a rule, the more distant the historical present is from the founder's (alleged) lifetime, the more the need for a fully developed biography arises.

After textual narratives, the stories are usually transferred into other media of human cultural expression such as pictorial depiction. We have clear evidence from Buddhist literature, but also from modern anthropological material of festivities and connected rituals performed on the occasion of the birth of the Buddha.

The problems, with which scholars are confronted when reading these texts as historical sources has been emphasized by Harry Falk quoting the French scholar André Bareau:

> Bareau has gone to great lengths to show that authoritative Buddhist texts, in expatiating upon the birthplace of the Buddha, are highly contradicting

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in the details, as if the authors had never personally been to the scene of the event. The place is called a 'village' (gāma) by Asoka; according to the Suttanipāta 683, the birth village (gāma) of the Buddha is located in the country (janapada) belonging to Lumbinī; in the Nidānakathā, Lumbinī is only a forest ...Chinese translations speak in terms of a 'garden' or 'park' ... The tree under which the Buddha was born is called in the sources either lumba ... or pippala ... shāla ... plaksa ... or else, in travel guides Asoka ... There is, therefore, every justification for Bareau's warning not to exaggerate the authority of the written sources in their details.

If we seek statements that offer a balanced account of the site as it actually was, we are forced to resort to the travel reports of foreigners, namely those written by Chinese and Tibetans.[3]

In search for historic evidence

There was a fully developed tradition on the last days of the 'Awakened One', the *Mahāparinibbānasuttānta* in the Pāli canon of the *Theravādin*, which finds its parallel in the Sanskrit version of the Sārvāstivādin and at different places in other Buddhist works. Some scholars have argued that this is the only piece of Buddhist canonical literature, which breathes the spirit of Lord Buddha himself.

The realistic overtones and contents of these texts have attracted scholars and have certainly contributed to historical research on the life of Lord Buddha, a culmination point of which is the publication of the well-known and impressive proceedings of a conference in Göttingen on the dating of Lord Buddha, edited by Heinz Bechert[4]. The impressive range of articles collected in these three volumes could, however, not solve the problem of the historical dating completely, but in tracing traditions on Lord Buddha's last days and his *parinirvāṇa*, this publication did indeed reveal the rich variety and diversity of the different Buddhist traditions even in case of their most common subject – the life of their founder.

It is no wonder that this part of Lord Buddha's life has attracted the attention of Western Buddhist scholars, who from the very beginning of the discovery of Buddhism as a religion, had become virtually obsessed with the idea and the possibility of retrieving historical facts from this very religious tradition.

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The outcome of this approach, which definitely was embedded in a colonial context and discourse, was that different aspects of the textual, art-historical and archaeological sources became neglected during the hunt for positivist results, which tried to answer questions like: did it, and if so, when, where and how did it happen? The most excessive use of almost only one strand of textual sources, the Pāli-tradition in its canonical and late commentarial textual representation, was completed by Schumann in 1989. Against this historicist undertaking stands the biographical sketch by Strong 2001. As has already been pointed out by other scholars, the fact that Buddhism was an extinct religion on the sub-continent opened up the possibility to reconstruct a Buddhist past without the interference of a modern continuation and tradition as in the case of Hinduism.

An overview of Buddhist texts

There are a vast number of Buddhist scriptures; however, there is not a single text that is considered authoritative by all schools of Buddhism. Each school of Buddhism has its own set of texts, which it considers important. The scriptures are understood to be the teachings of the historic Buddha, which was initially passed on orally from numerous generations until it was written down under various circumstances. Variations and different interpretations crept into the transmissions of these teachings early in the history of Buddhism. Later scriptures also include the teachings of other enlightened masters. These scriptures provide directions on how to understand and practice to gain self-enlightenment.

Buddhist scriptures can be categorized into three types:
The *Vinaya* are texts that record the rules of the monastic order for nuns and monks. The *Vinaya* includes the rules governing the life of every Theravada monk or nun along with the way they live in a harmonous relationship amongst one another and with their lay supports, upon whom they depend for all their material needs.

The *Abhidharma* (Sanskrit) or *Abhidhamma* (Pali) are texts of philosophical discourse that provide analysis of the *sūtras*. *Abhidharma* literally means referring to (abhi) the dhamma. It provides the theoretical framework to the Buddhist path to enlightentment.

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The *Sūtras* (Sanskrit) or *Sutta* (Pali), ('thread' is the Hindu *sūtra*, *sutta* comes perhaps from *sūkta* = 'well told', 'sermon') are texts which are generally considered to contain the sermon of the historic Buddha or one of his major disciples. *Sūtras* come in different lengths from several lines to entire books.

Buddhist scriptures are broadly divided into Theravāda and Mahāyāna canons. Theravādins do not consider the Mahayana scriptures to be authentic. Though Mahāyāna Buddhists do consider the Theravāda canon to be authentic, in some cases they consider their own scriptures to have superseded the Theravāda canons. However, within Mahāyāna Buddhism there exist different viewpoints concerning the importance of various scriptures.

The scriptures of the Theravāda school are collected in the *Tipitaka* (Pali) or *Tripitaka* (Sanskrit) meaning the three baskets. These are the *Vinaya-pitaka* or the Basket of Discipline, the *Abhidhamma-pitaka* (*Abhidharma-pitaka* in Sanskrit) or the Basket of Higher Teaching and the *Sutta-pitaka* (*Sūtra-pitaka* in Sanskrit) or the Basket of Discourses. The most complete and common version of the *Tripitaka* is in the Pali language, also called the Pali Canon.The Pali Canon is thought to be the words of the historical Buddha and some of his disciples, preserved it for a time by oral tradition and in the course of time there were written down and finally arranged in the 15th century in Sri Lanka in the canon we presently have at our disposal. Different versions of the Abhidharma also exist in fragments, the most intact coming from the Sarvastivada sect that emerged in the third century BCE.[5]

The Mahāyāna *sūtras* are said to have been written by unknown authors between the first century BCE and the fifth century CE and a few even later than that. Though some are linked to the sermons of the historic Buddha, most consider them to be later interpretations with deep wisdom and spiritual value, therefore revered as *sūtras*. The original Mahāyāna *sūtras* are considered to have been written in Hybrid Sanskrit.

The Mahāyāna *sūtras* often consist of many independent *sūtras*. The Avatamsaka Sūtra (Flower Ornament Sūtra) consists of large important, independent *sūtras*, and these records the higher teachings of Lord Buddha to Bodhisattvas and other spiritual beings. The Brahmajala Sūtra (Brahma's Net Sūtra) contains the Ten Major Precepts of Mahāyāna followers, and the Bodhisattva Precepts. The Prajnaparamita

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Sūtras (perfection of wisdom) consists of 40 *sūtras* including the Vajracchedika Prajnaparamita Sūtra (Diamond Sūtra) which sets forth the doctrines of Sunyata (emptiness) and Prajna (wisdom). The Prajnaparamita-Hrdaya Sūtra (Heart Sūtra) is one of the smallest but very popular *sūtras*, which has anemphasis on emptiness. The Vaipulya group of forty-nine independent *sūtras* includes one of the oldest *sūtras* the Ratnakuta Sūtra (Jewel Heap Sūtra). Here the philosophy of the middle is developed, which later becomes the basis for the Madhyamaka teaching of Najarjuna. The Saddharma Pundarika Sūtra (Lotus Sūtra) teaches the identification of the historical Buddha, with the Transcendental Buddha. There are three *sūtras* that form the doctrinal basis of the Pureland School: the Amitabha Sūtra (Shorter Amitabha Sūtra), the Amitayurdyhana Sūtra (Meditation Sūtra) and Longer Amitabha Sūtra. These describe the Blessings and Virtues of Amitabha Buddha and his Pureland, and discusses rebirth.[6]

The biographies of the many Buddhas

From the last episode in the life of Lord Buddha, so lively described in the *Mahāparinirvāṇasūtra,* three other episodic complexes have been elaborated on and legitimized, which are mentioned in this very text in form of the four main places of pilgrimage: the 'skeleton'of the Buddha biography seems to have consisted of the four major events – birth, enlightenment, first sermon and *parinirvāṇa.*[7]Here we already grasp a first step of another way of dealing with the biography of Lord Buddha – and it is no wonder that it did not attract the interest of Western scholars in the same way: a stereotyped string of important events, which were rather measured by their soteriological value and function than by a strict sense of 'realism'.

The very concept underlying the quotation from the *Mahāparinirvāṇasūtra* eventually led to the second biographical concept in the early Buddhism tradition: the idea that all Buddhas – the historical one, the uncountable past ones, and the future one – have virtually the same biographical framework. Only the names of persons, important items (such as the *bodhi*-tree) and places were different in every Buddha-vita and thus individualized the topic hagiographical scheme. This is well reflected in the Pāli Apadānasuttānta and the Sanskrit Avadānasūtra, in which the life of the Buddha Vipaśyin (Pāli Vipassī) is related by the Buddha Śākyamuni himself.[8]

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The idea of Buddhas of the past – and in consequence also the Buddha of the future, Maitreya – having led similar lives as the Gautama Śākyamuni Buddha seems to project these Buddhas and with them, the historical Buddha into a mythical, almost timeless and space less sphere. This very idea or belief in Buddhas of the past is revealed to be very early through the Asokan Nigālī Sāgar inscription. This shows that in the early period, the idea of the Buddhas of the past was still very much a concrete, tangible and accessible reality, which could be visited on a pilgrimage tour. The Chinese pilgrims, Faxian and Xuanzang, report on the *stūpas* of the Buddhas Krakucchanda and Kanakamuni near Kapilavastu, although it is not clear to what extent these places were still frequented places of veneration.[9]

The creation and transmission of Buddhist literature

Buddhist literature begins with the oral instruction given by Lord Buddha to his immediate disciples. It is however not known in what language he made his discourses. It is assumed that the language used at the time was not Vedic Sanskrit, but a vernacular such as the eastern middle Indo-aryan language, Māgadhī.[10]

The *Theravādins* assume that their canon has come down in the language used by Lord Buddha, which they consequently call Māgadhī as well as Pāli.

However, it has been understood that the Theravāda canon is much later than Lord Buddha and that Pāli never was a spoken language. Pāli might have been a lingua franca with roots in a language spoken in western India but derived from an earlier eastern version.[11] No original text of the very beginnings of Buddhism has come to us. Therefore, it is evident that the texts as found in the Theravāda canon, though the oldest Buddhist texts surviving, are the result of a lengthy and complicated development.

All editions of the Buddhist Canon are ultimately based on palm leaf manuscripts handed down in the Theravāda countries. The continuous manuscript tradition with complete texts begins only during the late 15th century. There are earlier fragments of texts found engraved in stone and on gold or silver folios. The oldest fragment of Theravāda *Vinaya*, copied during the eight or ninth century, was found in Kathmandu. So the available texts of Theravāda literature were written down some 2,000 years after Lord Buddha.

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For more than one, if not two, centuries the texts were and had to be handed down orally, as there was no script in India.[12] Consequently, the texts were in constant danger of being changed or tampered with by individual monks such as Purāna, who came too late to attend the first council and refused to accept the received version of the text, but preferred to stick to the wording as he had heard it personally from Lord Buddha. This is the first hint at a split of text tradition.

To guard the texts against alterations, Buddhists developed some means to check their authenticity at a very early date. These are the four *mahāpadesas* 'the great arguments': a text should have been heard (1) directly from the Buddha; (2) from a knowledgeable community of monks; (3) from learned Theras, or; (4) from a single competent Thera. Then it needs to be verified as to whether or not the content concurs with *Vinaya* and Suttantas. This at the same time presupposes some collection, against which to check it, some kind of nucleus from which a canon developed.

The Nativity Story: Translations of texts

The following pages provide a series of examples of texts from various sources that refer to Lumbini and the nativity story. The texts are translations from both Pāli and Sanskrit sources which provide us with an overall impression of the Buddhist image of Lumbini during the birth of Gautama Buddha.

Mahāpadāna-sutta (Dīgha-nikāya 14)

> It is the rule that whereas other women give birth sitting or lying down, it is not so with the Bodhisattva's mother, who gives birth standing up. That is the rule (Dhammatā: that which is in accordance with Dhamma as universal law).
>
> It is the rule that when the Bodhisattva issues from his mother's womb, devas welcome him first, and then humans. That is the rule.
>
> It is the rule that when the Bodhisattva issues from his mother's womb he does not touch the earth. Four devas receive him and place him before his mother, saying: "Rejoice, Your Majesty, a mighty son has been born to you!" That is the rule.

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It is the rule that when the Bodhisattva issues from his mother's womb, he issues forth stainless, not defiled by water, mucus, blood or any impurity, pure and spotless. Just as when a jewel is laid on muslin from Kāśī, the jewel does not stain the muslin, or muslin the jewel. Why not? Because of the purity of both. In the same way, the Bodhisattva issues forth stainless … That is the rule.[13]

Acchariyabbhutadhamma-sutta (Majjhima-nikāya 123)

Other women give birth seated or lying down, but not the Bodhisattva's mother. The Bodhisattva's mother gave birth to him standing up.
When the Bodhisattva came forth from his mother's womb, first devas received him, then human beings.

When the Bodhisattva came forth from his mother's womb, he did not touch the earth. The four young gods received him and set him before his mother, saying: "Rejoice, O Queen, a son of great power has been born to you."

When the Bodhisattva came forth from his mother's womb, he came forth unsullied, unsmeared by water or blood or any kind of impurity – clean, and unsullied. Suppose a gem is placed on a Kāśī cloth, then the gem would neither smear the cloth nor the cloth the gem. Why is that? Because of the purity of both.[14]

Sanskrit Buddhacarita, Canto I, 8 ff

In that glorious grove the queen … proceeded to a couch overspread with an awning. Then … from the side of the queen … a son was born … without her suffering either pain or illness. … When in due course he had issued from the womb, he appeared as if he had descended from the sky, for he did not come into the world through the portal of life; and, since he had purified his being through many an eons, he was born not ignorant but fully conscious. With his lustre and steadfastness, he appeared like the young sun that had come down to earth … For with the glowing radiance of his limbs … he illumined all the quarters of space.[15]

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The early texts were subject to several comments. Christian Luczanits discusses the period before the birth.

> Prior to birth, it is said, the Bodhisattva had stayed in Tusita heaven and descended from there to assume his last worldly existence. Indeed, the notion that the last birth of a Buddha follows a sojourn in Tusita heaven, found in all textual sources that also narrate the birth. However, there are considerable differences in these sources, concerning the context of the descent from heaven and in the details narrated. In principle, the events prior to birth become more and more elaborate and miraculous.[16]

> In the *Vinayas* of the Mahīśāsaka and Dharmaguptaka schools, which are preserved in Chinese translations only, the birth of the Buddha is not narrated at all. Instead, these texts focus on the origin of the Śākya-clan, its genealogy and jump directly to the prophecy of the Brahmans. Obviously the Brahmans do not prophesize on the basis of Māyā's dream, since that is not narrated either.

> In the canonical Pāli literature, there are only two works that also narrate the birth of the Buddha. These are the Mahāpadānasutta (MASU) of the DīghaNikāya, which is also partly preserved in a Sanskrit version (Mahāvadānasūtra), and the Acchariyabbhutadhammasutta. Both declare that the events during the last life of any Buddha are, as a matter of fact, identical.[17]

Nidāna-Kathā

> Now between the two towns, there is a pleasure-grove of sāl-trees belonging to the people of both cities, and called the Lumbini grove. At that time, from the roots to the topmost branches, it was one mass of fruits and flowers; and amidst the blossoms and branches swarms of various-coloured bees, and flocks of birds of different kinds roamed warbling sweetly. The whole of the Lumbini grove was like a wood of variegated creepers, or the well-decorated banqueting hall of some mighty King. The Queen beholding it was filled with the desire of besporting herself in the sāl-tree grove; and the attendants carrying the Queen, entered the wood. When she came to the

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monarch sāl-tree of the glade, she wanted to take hold of its branch, and the branch bending down, like a reed heated by steam, approached within reach of her hand. Stretching out her hand, she took hold of the branch, and then karma-born winds shook her. Standing, and holding the branch of the sāl-tree, she delivered.

That very moment, the four pure-minded MahāBrahmās came there, bringing a golden net; and receiving the future Buddha on that net, they placed him before his mother, saying: "Be joyful, O Lady! A mighty son is born to thee!"

Now other living things, when they leave their mother's womb, leave it smeared with offensive and impure matters. Not so the Bodhisattva. The future Buddha left his mother's womb like a preacher descending from a pulpit or a man from a ladder, erect, stretching out his hands and feet, unsoiled by any impurities from contact with his mother's womb, pure and fair, and shining like a gem placed on fine muslin of Benares. But though this was so, two showers of water came down from heaven in their honour and refreshed the Bodhisattva and his mother, and cleansed her body.

From the hands of the Brahmās, who had received him in the golden net, the Four Kings received him on cloth of antelope skins, soft to the touch, as are used on occasions of royal state. From their hands, men received him on a roll of fine cloth; and on leaving their hands, he stood up on the ground and looked towards the East. Thousands of world-systems became visible to him like a single open space. Men and devas, offering him sweet-smelling garlands, said: "O great man, there is no other like thee, how then a greater?" Searching the 10 directions and finding no one like himself, he took seven strides, saying: "This is the best direction." And as he walked, the Great Brahmā held over him the white umbrella, and the Suyāma followed him with the fan, and other devas with other symbols of royalty in their hands. Then, stopping at the seventh step, he sent forth his noble voice and shouted the shout of victory, beginning with: "I am the chief of the world."

The Madurattha Vilāsini adds the rest, "I am supreme in the world; this is my last birth; henceforth, there will be no rebirth for me".[18]

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As already mentioned by John Strong in his book, *The Buddha – A Short Biography*, we have no detailed information about Lord Buddha's birth.

> In relatively early canonical sources, we are not told much about the Buddha's actual birth. From Tusita Heaven, he is simply said to descend and enter the side of his mother; Queen Māyā. He dwells in her womb for exactly ten lunar months, during which time he remains calm, alert, perfectly formed in body, and unsullied by any pollution. In some sources, Māyā is said to be able to see and contemplate him inside her. At the end of this period, she gives birth while standing up holding on to the branch of a tree. The birth is painless. The Buddha is not born naturally, but emerges from his mother's side. This lack of passage through the birth canal is often said to reflect a concern for purity, but it may also be connected to a pan-Indian tradition that asserts that the trauma of natural birth is what wipes out the memory of previous lives. In this context, since the Buddha is aware of his previous existences, he obviously could not have been born naturally.
>
> Later biographical traditions were to draw out and expand upon this whole scenario – starting with the Buddha's conception. For instance, the Mahāyānist text Lalitavistara, which does not actually get to the Buddha's birth until its seventh chapter, dwells at first, and at great length, on his activities in Tusita Heaven, on his preparations for his final birth, his contemplation of the right time, place, family, and mother for that birth, and on his final teachings to his fellow gods in heaven, followed by his descent into his mother's womb in the form of a great six-tusked white elephant. Some traditions present this elephant merely as something dreamt by his mother. In either case, it is clearly an auspicious symbol of sovereignty (the great white elephant was one of the emblems of the cakravartin king), as well as a reference to one of the Jātaka tales which features the Bodhisattva's self-sacrifice as a great six-tusked elephant.
>
> The Lalitavistara also describes at length the bodhisattva's intra-uterine life, portraying him as sitting on a divan that is soft as Benares silk and is set within a perfumed chamber, inside a bejewelled palace-like pavilion implanted in his mother's belly. Inside this amniotic chamber, the Buddha is said already to possess the thirty-two marks of the great man, and to receive various

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divinities, who come to visit him and hear him preach the Dharma. This whole placental palace, the text is careful to point out, in no way harms or brings discomfort to Queen Māyā, and, at the time of the Buddha's birth, it also emerges and is transported up to Brahmā's heaven, where it is worshipped as a relic. It is clear here that this text has moved very far away from the notion of an ordinary human birth.

The biographical tradition was to locate the event of the Buddha's birth in the village (or park) of Lumbinī, a site that was visited as early as the third century BCE by the emperor Asoka, and is located just over the northof Indian border in what is now southern Nepal. The Pali commentaries explain that Queen Māyā wanted to have her child at her parent's house in Devadaha, but failed to make it all the way home in time, and so gave birth at Lumbini – the halfway point of her journey. A Sanskrit text develops this story further, maintaining that Lumbini was actually the name of Māyā's mother; the park in question was named for her after having been made by Māyā's father, Suprabuddha, at a point half-way between the towns of Devadaha and Kapilavastu.

As it is obvious from all nativity scenes, either in painting or in sculpture, the mother gave birth to the child standing up and holding the branch of a tree. This motif may have evolved from a pan-Indian motif "the lady under the tree."[19]

Latitavistara

"Lord, listen to my wish as I relate it unto you. It is my earnest
desire that I should immediately proceed to the garden.
Should it not be to your annoyance, or harm, or trouble,
I would quickly repair to the pleasure-garden. (1)

"'You have become wearied by penance and constant devotion
to virtue, and I am confirmed for a long time, carrying within
me the pure being. The noble Sāl trees in serried lines are in blossom;
it is fit, therefore, O lord, that I should go to the garden ground. (2)

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"'It is the noble season of spring, the delighter of women;
the black bees are in murmur; the koels are in full song;
many-coloured and pure (pollen) powders from the flowers are flying in
the air;
dear one, accord your permission that I may proceed without delay.' (3)

"Hearing these wordes of the lady, the king, in delight and joy of mind,
thus addressed his courtiers: 'Place in array my vehicles harnessed to
elephants and horses, and my chariots, and decorate
the precious Lumbinī garden. (4)

"Decorate the Lumbinī garden which, in its wealth of flowers,
is like the Nandana garden of the Sūtras, with jewels and gold in profusion;–
with precious stuffs of various kinds set off all the trees;
and having done so report to me.' (8)

"These commands having been heard, the Lumbin? garden was immediately
decorated.
"The courtiers then exclaimed: 'Success, success attend thee, O king! May
thy life be long!
Lord, without waiting we have already done everything according to thy
command
and are awaiting thy pleasure.' (9)[20]

The Narrative of the birth of the Buddha in a late Tibetan source

As told by sKal-bzang Chos-kyi rgya-mtsho (fifteenth century). Translation from the Tibetan original by Franz-Karl Ehrhard from the "Treasure of the Conduct in the Form of Unerring Deeds", the third chapter, called, "The Deed of the Birth".[21]

[I]
Then, when the eighth day of the first month, [that is] the time of the birth, had come, there manifested in the park of King Śuddhodana 32 omens. All flowers, the lotuses in the ponds and the blossoms on the trees of paradise opened up, but then they ripened no further. Eight trees of paradise bearing

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precious jewels grew up, [and] 20,000 treasure mines were laid bare; in the houses precious jewels sprouted forth. With a dash of perfumed water, all the defilements of the swollen water channels were purified, by reason of its fragrant scent. The lions cubs, which had descended from the snow ranges, circumambulated the town of Kapilavastu, and afterwards did not cause harm to any living being, as they lay at the gates [of the town]. Five hundred ashen-grey elephant calves arrived and touched the King's feet with the tip of their trunks.

Divine children rolled about in the laps of the retinue of the wife of King Śuddhodana, nāgā girls charged with offering articles emerged [from the ground] with half of their bodies and roamed the sky, and 10,000 divine girls decorated with peacock feathers hovered in the sky. And 10,000 filled vessels encircled Kapilavastu [as well]. Divine girls stood by with golden vessels filled to the brim with globules of perfumed water. Ten thousand divine girls stood by with umbrellas and flags. Many hundreds [and] thousands of divine girls set down conch shells, drums and the like from their necks and took up their places.

Wind and dust did not rise; no rivers flowed or moved about. The sun, moon and the stars did not wander [through the sky]. The lunar mansion (naksatra) [known as] sKar-ma rgyal [held sway]. The house of Śuddhodana was covered with a net of precious jewels. Not even a fire was burning [in it]. Glittering gems and precious jewels hung from the two-storeyed palace, and its golden roof and its toranas. Doors opened up onto treasure stores full of calico and manifold precious jewels. There was no noise from owls or the like; [only] pleasant voices were to be heard. The broad stream of the acts (karma) of the beings had been severed. All regions were flat, [and] the crossroads and the centres of the market places were strewn with snippets of flowers. Pregnant women gave birth with pleasure.

The deities inhabiting the groves of sāl trees emerged with half of their bodies from the leaves of the trees and bowed down in respect, and [arboral] residences appeared.

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[II]
Then, because the Bodhisattva had for a long time been uttering praises of seclusion and had been happy in anticipation of it, and because the gods could make no offerings if he were born in the town [of Kapilavastu], and also because the Śākya clan would manifest indecent behaviour, the thought arouse in Māyādevī, who realized that the time had come for the birth of the Bodhisattva, of proceeding to the seclusion of the grove of Lumbinī and staying [there].

In the twilight of the evening, she approached the King and spoke: "As I have been wishing for a long time to go to the grove of Lumbinī, give your unreserved permission [to do so]!" The King himself, after he had fully awoken [the next day], ordered that the grove of Lumbinī be cleaned. At that time, great omens appeared in the grove: phenomena occurred in all the jewelled palaces above the earth, and light burst forth from all the petals of the opened jewelled lotuses and covered [everything], accompanied by the sound: "He will be born!" And in the grove, 10 appearances – including those of the Jinaputras of the 10 directions – manifested, generating the 'Mind [of Enlightenment]' (bodhicitta) up to 'Enlightenment' (bodhi).

[III]
Then, when King Śuddhodana had furnished his own retinue with oxen, horses and 20,000 guards and had ordered that the grove of Lumbinī be beautified with ornaments, he spoke to the women of the retinue of the Queen: "Decorate yourself with ornaments and bind cymbals [on your hands]! Order the best of carriages to be available – similar to a magic unicorn. Let the younger women pull it!"

After the women had acted accordingly, Māyā [devī] and her retinue set off. When they approached the gate [of Kapilavastu], the great sound of an assembly of a 100,000 beings arose – the ringing of a 100,000 ritual bells [to cause] joy. On the carriage adorned with precious jewels, four bejewelled trees of paradise were set up, bearing blossoms and leaves. The whole was covered with a net of ritual bells and divine cloth, [let down] from above by peacocks, geese and swans. A lion throne with umbrellas, victory banners and flags erected over it was prepared by the deities, [and] as soon as the mother sat down, the earth moved.

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The gods scattered flowers from the sky and exclaimed: "Today the Noble One among the beings will be born!" The four "Protectors of the world" (lokapāla) guided the carriage, Indra cleaned the way, Brahma cleared it, and 100,000 gods went along, bowing down in respect.

Behind the carriage of the Queen [were] horse [and] elephant carriages, encircled and protected by 84,000 armoured guards. Sixty million girls of the Śākya [family] went ahead, [and the carriage] was encircled by 60,000 persons playing cymbals and singing songs. Divine, nāgā, gandharva, kinnara and asura girls – 48,000 each – followed behind, singing songs and uttering praises. The King himself observed this from his residence of Kapilavastu and thought: "This son will surely become an Enlightened One!"

The grove of Lumbinī itself was anointed with perfumed water and strewn with godly flowers, [while] on trees of paradise grew unseasonal leaves, blossoms and fruits. The order was given to adorn them with red silk, [and] they were [also] covered with ornaments of gold and precious jewels.

[IV]
Then, after Māyādevī had arrived at the grove of Lumbinī, she descended from the carriage. Encircled by Umā [i.e. Śhiva's consort], old women of human origin, 60,000 divine girls and a throng of [other] beings, she went from wood to wood and wandered from forest to forest – slowly moving on, looking from one tree to another. And in a wide, flat area full of blue[-green] grass, touching which one became joyous, grew Aśoka [trees] adorned with flowers, joyful sāl trees, and the tree called plaksa, a King among trees – which had [already] supported mothers of earlier Jinas, being a tree honoured by the gods of the pure realms. Its root blazed forth with the light of the most precious jewels, its trunk, branches and leaves were adorned with precious jewels, its manifold earthly and divine blossoms were in bloom, endowed with the aroma of excellent perfume, [and] on it was hanging multi-coloured silk. When she arrived there, immediately the branches of these trees of paradise bowed down and greeted her in respect of the Bodhisattva [carried by her].

At that time, all the light of the 3,000 [worlds] was outshone by the appearance of the light coming forth from all the gates of the body hair of Māyādevī, and

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the suffering and obscuration of the [three] lower realms came to rest. [This light] entered the body of the [three] thousand great worlds, and it appeared, as if separately, near a tree in a park of the manifold royal residences of the 10 milliards Jambudvīpas of these [worlds], being present individually [as many] Māyādevīs. And in each and every body hair appeared [as performed] by the Bodhisattva, the [different] ways of making offerings as many earlier Jinas as there were, and as much of the doctrine as was propounded [by them] was uttered. Similarly, all the earlier deeds of the Bodhisattva, the endless Buddha-fields in their entirety and as many implements as were used, appeared in the grove of Lumbinī.

[V]

In order to demonstrate a joyous birth, the mother extended her right arm, and after grasping a branch of the plaksa [tree], she gazed into the centre of the sky and stretched herself. At that time, numerous enjoyable sensations of the Bodhisattva, transcending [those] of the gods, arose from the womb of the mother, and the many Buddhas similar to Śākyamuni came forth. Offerings in the form of Kingly eight-petalled lotuses of precious jewels made from Vajras manifested in front of the mother.

Śatakratu [= Indra] pondered: "As this mother is endowed with a sense of shame, she is not able to give birth amidst so many people. And as she also shies away from me, I must at all costs scatter her retinue, and personally seize the Bodhisattva [after his birth]!" He then made a violent hail shower come down, whereupon the multitudes of the retinue ran away. Śatakratu put on the garments of an old woman [those of] his own mother, and sat down near [Māyādevī]. Brahma was present as well.

Then all the Tathāgathas made light come forth, so as to induce the Bodhisattva to take birth. And so that the doubts [of those who might think that] all these sentient Bodhisattvas had been born from an embryo produced by a father and a mother might be sundered, and that something pure and very excellent might be demonstrated, he was born in the midnight hour from the right side of the mother's ribs in a state of full consciousness, while a light which frightened enemies and [caused] joy if touched spread, having the appearance of gold, in the expanse of the 3,000 [worlds]. He was

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endowed with the 10 aspects of birth, the [moon] at the time [still] being in [the mansion] sKar-ma rgyal.

In order to fulfil the earlier prayer and to make the other gods feel craving, Śatakratu covered his hands with a layer of animal hide and seized [the Bodhi¬sattva] with a layer of precious divine material from Kāśi [i.e. Benares]. To subdue Śatakratu's pride, the Bodhisattva empowered his body as a vajra so that he was not able to seize him. When Śatakratu was trembling [with fear], [the Bodhisattva] spoke: "Kauśika, let me go! Leave me!" Brahma, [too, tried to] seize [the Bodhisattva] with the layer of divine material from Kāśi, but he was not able to hold either; and so he carried away the two-storied palace used [by the Bodhisattva] in order to venerate it in Brahmaloka. It is known that the four Great Kings [i.e. the Protectors of the world] wanted to seize [the Bodhisattva] [as well], but could not hold him. [Only] after four Godly Sons had been established in the four cardinal directions, could he be held with the layer of wild animal hide; this was done, in short, so that he did not suddenly plunge onto the ground.

At that time, the blossoms of all trees unfolded and fruits came forth. There was a rain of flowers, the stream of the three lower realms was interrupted, all living beings were no longer harmed by their obscurations, beings without their senses possessed them [from this time onwards], [and] the earth moved.

[VI]
At that moment, when the Bodhisattva had taken birth, in four great towns, sons were born to four kings as well. When in Śrāvastī the son of King Brahmadatta Aranemi was born, he appeared as had been clear to the divinators of the country that he would, and thus, his name was Prasenajit. When in Rajagrihā the son of King Mahāpadma was born, he appeared in the shape of the rising sun and was the son of a beautiful woman; therefore, he was called Bimbisāra. When in Kauśambī the son of King Śatanīka was born, he appeared like the rising sun of the world; therefore he was called Udayana. When in Ujjayinī, the son of King Anantanemi was born, he was like the brightness of the beacon of the world; therefore, he was called Pradyota. Each of these [Kings] was proud of the qualities of his own son.

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At that time, in the town of the Śākyas [i.e. Kapilavastu]: 500 excellent ones were born, including Bhadrika Nanda, 500,000 further [members] of the Śākya [family], 800 subjects, including the one [named] Chanda, 10,000 girls of the Śakya [family], including the one [named] Praśansa, 800 female servants, 20,000 girls of royal origin, and from Brahmin and householder [castes], 20,000 male and female horses, including the famous white riding horse that emits golden light [Kasthaka], 10,000 excellent elephants [and] 6,000 male and female oxen. Twenty thousand elephants adorned with gold trumpeted from the sky and came to Kapilavastu. Also, [he who is called] Udayin, the son of Udayana, a minister of Śuddhodana, was born.

[VII]

Blossoms opened up on the trunk of aśvata [trees] in the centre of Jambudvīpa, and udumbara [lotuses] on the shore of [Lake] Anavaptata. Corals sprouted in the sandalwood groves and on the mountain peaks of the minor continents. On the banks of the falling torrent Lohita the tree known as Virtuous Essence grew a 100 cubits in one day: as long as the sun has not arisen, it can be cut with a finger nail; [but] after the sun has risen, not even fire can burn it.

In the grove of Lumbinī, a stūpa similar to a heap of lotuses was erected– known as the "Caitya where [the Buddha] was born". Five hundred parks, including [the one known as] Stainless Array, and also 500 treasures, appeared for the enjoyment of the Bodhisattva. For their part, 20,000 minor royal domains offered taxes and bowed before him.

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CHAPTER TWO

Historical texts and early visitors to Lumbini

Basanta Bidari

The Asoka Pillar, view towards the north

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Historical records

With an inscription on the Asoka Pillar dating from as early as 249 BCE, Lumbini has a rich historical background, which has been noted in various written sources over the centuries. The first historical documentation of Lumbini is limited to the observations of five Chinese travellers who visited the site between the fourth and eighth centuries CE. In the fourteenth century CE Ripu Malla made a pilgrimage to Lumbini and had an inscription added to the Asoka pillar. However, it was only more than five centuries later, following the 'rediscovery' of Lumbini in 1896, that detailed information on Lumbini began to be recorded by visitors and researchers.

When Lord Buddha was approaching his *mahāparinirvāna*[1], he advised his followers that there were four great places of pilgrimage associated with his life: Lumbini, where he was born; Bodh Gaya, where he achieved enlightenment; Sarnath, where he first taught the Dharma; and Kushinagara, where he was to complete his *mahāparinirvāna* or great passing.

From that time, Lumbini became an important pilgrimage site for early Buddhists, witnessing a continuous flow of people, who came with faith and devotion, seeking purification of their minds. The birthplace has yielded ample cultural deposits related to the fifth and sixth centuries BCE. There is however no record or evidence of visits made by any high authorities before Emperor Asoka visited in the third century BCE.

The appeal of Lumbini stretched beyond South Asia, as exemplified by the pilgrimage of several Chinese monks whose accounts were later used by antiquarians in the nineteenth century to locate Lumbini.[3] These Chinese monks travelled to where Buddhism was founded in the hope of finding the original and authentic teachings.

> However, China was not destined to receive Buddhism nor to see it propagated by apostles who came from India. This nation, which seems to do everything in an inverted order, far from waiting for the religious faith to be brought to it, went to seek for it in foreign lands. It was as it were proselytism reversed. The Chinese pilgrims, for they cannot be called missionaries, went to India, some thousands of miles from their own country, to imbibe a purer dogma or to revive a failing faith.[4]

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Emperor Asoka's pilgrimage

The third century BCE is a landmark era in the history of Lumbini. The conversion of Emperor Asoka following the massacre and bloodshed in the devastating battle of Kalinga (present-day Orissa state in India) was a milestone in the history of Buddhism.

According to Buddhist tradition, as preserved in the Divyavadana, Asoka began a pilgrimage to Lumbini in the company of his preceptor, Upagupta. On their arrival, Upagupta, pointing to the tree under which the mother of the Buddha had stood holding on to a branch while delivering her child, said, "Oh, Maharaja! Here the Blessed One was born." To commemorate his visit he left behind monuments to propagate the Dhamma (the teachings of the Buddha).[5]

This occurred in the year 249 BCE, and Asoka erected a sandstone pillar with an inscription to memorialize his visit. The inscription contains five lines and 90 letters (Brahmi script and the language Pali, though according to some scholars, it is in the Ardha Magadhi, an ancient form of Magadhi Prakrit and often considered synonymous with Pali). The inscription reads as follows:

> Devānapiyena Piyadasina lājina vīsativasābhisitena
> atana āgāca mahīyite hida Budhe jāte Sakyamuniti
> silāvigadabhīcā kālāpiṭe silāthabecha usapāpite
> hida Bhagavam jāte ti Lummini gāme ubalike kate
> athabhāgiye ca[6]

The first statement proclaims: *King Piyadasi, the beloved of the gods, in the twentieth year of his reign, personally came to pay reverence.* There are variations in the words used in the different translations; however the meaning of this phrase is clear. This is followed by the statement: *Since the Buddha Sakyamuni was born here* ... testimony to this being the birthplace of Siddhartha Gautama.

The parts that follow seem to have been more difficult to translate, especially the two phrases: *silā vigadabhī cā* and *ubalike kate athabhāgiye ca*. These phrases imply that the king donated various stone objects due to the fact that Sakyamuni Buddha was born here. The second part of this line clearly states that a stone pillar was erected.

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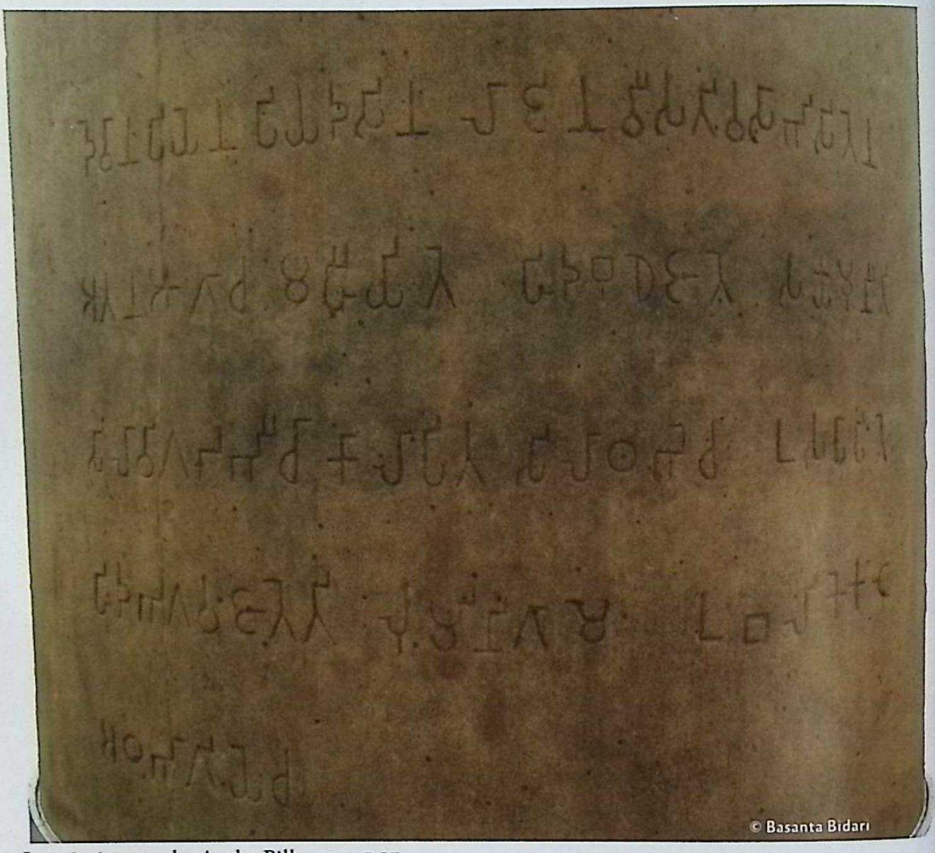

Inscription on the Asoka Pillar, 249 BCE

However, the translation of the first part varies greatly, with one interpretation noting that a stone railing was constructed while another refers to a stone figure, possibly even that of the supposed horse capital mentioned by Xuanzang, the Chinese traveller, who visited Lumbini in the seventh century CE. The interpretation to this phrase was revised following the discovery of the Marker Stone in 1994. A.K. Narain suggests that it could mean "a public assemblage area in the form of a high terrace or an enclosure of bricks, bhīcā, around a place of worship or celebration (mahiyite) of the much spoken of (unusual stone) (*silāvigada*)".[7] Keisho Tsukamoto, a professor emeritus at Tohoku University and a specialist in Indology and the history

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of Buddhism, proposes that the term refers to the Marker Stone: "He caused to be made [the structure] with the enclosure (or wall) [to protect] the stone being in its natural condition, i.e. a piece of natural rock..."[8]

The last part of the inscription states: *The Lord having been born here, the Lumbini village has been exempted of taxes and granted the eight shares or reduced the tax to an eighth part* (from the usual sixth). The interpretation that there is reference of granting the eight rights is proposed by Harry Falk.[9]

An English translation of the inscription is included below:

> By King Piyadasi, the beloved of the gods (who) having been consecrated twenty years (having) come himself personally (here) to offer homage, or celebrate, because Shakyamuni Buddha was born here, was caused both a Silavigadabhica to be built and a stone pillar to be set up. (And), because the Lord was born here, the Lumbini village was made free from taxes and liable to pay (only) one-eighth part (of the produce).[10]

From the inscription of the Asoka Pillar in Lumbini, it can be concluded that Asoka had a great respect for the Buddha. He personally visited Lumbini, worshipped at the birth spot, constructed a platform to place the Marker Stone upon and erected a stone pillar with a suitable inscription stating the significance of the place as one worthy of commemoration. The inscription also states that pilgrims visiting the location were exempt from all religious taxes and that the levy on the produce of the village of Lumbini was reduced.

ACCOUNTS BY CHINESE TRAVELLERS

Zhi Sengzai

The Yuchi-monk Zhi Sengzai (Seng Tsai) of the Chin Dynasty (265 - 420 CE) is known to be the first Chinese person to visit Lumbini, between 350 - 375 CE. The following description of Lumbini is a translation from Zhi Sengzai's lost Waiguo-shi in the Shui Ching Chu (Shuijing-zhu), anterior to 400 CE.

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Waiguo-shi says that the kingdom of Kapilavastu (Jiaweiluoyue) does not have a king now. The city and its ponds are deserted and dirty, there being only an empty space. There are some upāsaka, about 20 households of the Shākya family; they are the descendants of King Shuddhodana. Of old they formed four families, who dwelt inside the old city and lived as upāsakas; formerly they zealously cultivated religious energy (*vīrya*) and still maintained the old spirit. In those days, when the *stūpas* were dilapidated, they completely repaired them. The King of Kapilavastu, over and above this, took care of one *stūpa*, and the king of Sidha (la) dvīpa (Sihetiao) sent gifts as an aid to finish it. But now there are [only] 12 monks who dwell inside the [city].

The marvellous tree, which the excellent queen grasped when the Buddha was being born, is called *xuhe* (a) shoka. King Asoka made a statue of the queen, in the act of grasping [the tree] and giving birth to the prince, out of lapis lazuli. When the old tree had no more offshoots, all the *shramata* took the old trunk and planted it; and over and over again it continued itself till the present time. The branches of the tree still shelter the stone statue.

The outlines of the marks where the prince walked seven steps are also still preserved today. King Asoka enclosed the marks with lapis lazuli on both sides, and again had them covered over with one long slab of lapis lazuli. The people of the country continually make offerings to them with sweet-smelling flowers. One still clearly sees the outlines of the seven footprints; although there is no slab covering them, it makes no difference. And again, people may cover them with several layers of heavy cotton (*karpāsa*), fastening the latter to the chiselled stone but still [the marks] shine through them and are even brighter than before.

When the prince was born, the (two) kings of the *nāgas* came to the prince and, one to the left and the other to the right, spewed water and bathed him. The one nāga was seen to spew cold water, and the other warm water; [this water] produced two pools. Even now, one pool is cold and the other is warm.[11]

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Faxian

Faxian, a Buddhist monk from the Shansi province in China, came to Lumbini at the beginning of the fifth century CE. An excerpt of translations from his travel account concerning Lumbini is given below:

> Going less than one *yojana* from there to the north, one comes to (another) township. This is the birthplace of the Buddha Kanakamuni [...], the place where father and son met and the place (where this Buddha) entered into *parinirvāna*; at all (these places) too, *stūpas* were erected.
>
> Going less than one *yojana* from there to the east, one comes to the city of Kapilavastu ... In the whole city there is neither king nor population (left) and there are many mounds (of debris?) and much destruction. Only (a few) monks and ten families are living there. Where once stood the palace of King Suddhodana a statue of the prince's mother was erected (showing her) at the time when the prince, riding on a white elephant, entered her womb. ...
>
> Fifty *li* to the east of the city there is a royal park. The park is called Lumbini (Lunmin). (There) the wife (of the king) took a bath in a pond, left the pond from the north side, took twenty steps forward, grasped a tree with her hand and, (turning) to the east, delivered the prince. The prince came down to the earth and took seven steps. The two *nāga* kings bathed the prince. On the spot where (his) body was washed, a well was built, and from the above-mentioned pond in which (the prince's mother) bathed, the monks still drink today.
>
> The kingdom of Kapilavastu is barren and empty, the population is low, (and) on the roads one (has reason) to fear white elephants (and) lions; it is not easy to travel there.[12]

The translation also notes that the actual tree which Mayadevi took hold of during her delivery was still living.[13]

Kathmandu, Nepal

G·382 3962

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The sacred pond with remains of ancient stupas

Xuanzang

Xuanzang visited Lumbini in the seventh century CE and left detailed descriptions in his travel account calling Lumbini the 'La-fa-ni' grove.[14] Xuanzang mentions the stone pillar, but does not say anything about the inscription on it.

> Outside of the southern city gate, on the left side of the road, there is a *stūpa* (which marks the place where) the prince tried his skills with the Sākya in shooting (arrows) at iron drums. From there some 30 *li* to the south-east there is a *stūpa*; at the side of it there is a spring. The (water of the) spring

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flows clearly. This is (the place where) the prince compared his strength and matched his skills with the Sākya, (and when he) drew (the bow and) the arrow left (the string), it pierced the surfaces of the drums (and) flew further and penetrated into the soil (until its) feathers disappeared; from (the place where the arrow penetrated the earth) sprang a clear flow (of water). There is a common tradition which calls this (spot) the 'Arrow Spring' … (When people) are sick (they) drink (this water) or bathe (in it and) are very often cured. People from far away carry the mud (of this spring) home, and depending on their sufferings smear it on their forehead, (for example). (As it is) mysteriously protected by the good spirits (it) often heals (the diseases).

Going eighty or ninety *li* north-east from the Arrow Spring, one comes to Lumbini. There is a bathing pond of the Sakya clan, (whose water is) clear as a mirror, and on whose surface flowers are scattered and drift. Twenty-four or twenty five steps to the north (of the pond), there is an Asoka flower tree (Wuyou-hua-shu), which has now already withered; this is the place where the sacred birth of the Bodhisattva took place.

After the Bodhisattva was born, he took seven steps in each of the four cardinal directions without being supported and said: "In heaven and on earth, I alone am the venerable. From now on, my rebirths have come to an end." Big lotus flowers sprang up at the spots where he had set his feet. The two *nāgas* leapt out (from the earth) and rested in the air. Each of them spewed to wash the prince – one cold, one warm. East of the *stūpa* which (marks) the place where the prince was bathed, are two pure springs, and beside them two *stūpas* were built. This is the place where the two *nāgas* leapt out from the earth. After the Bodhisattva was born, the servants and relatives rushed to look for water to bathe (him). Two springs sprang up in front of the consort (Māyā) – one cold and one warm – in which (the prince) was bathed. To the south (of this place), there is a *stūpa* (which marks) the place where the ruler of the gods, Shakra, received the bodhisattva. When the Bodhisattva left his mother's womb, the ruler of the gods, Shakra, held up the Bodhisattva while kneeling on a marvellous, heavenly piece of cloth. Nearby there are *four stūpas*; this is the place where the four heavenly kings (lokapāla) took the Bodhisattva in their arms. When the Bodhisattva was born from the right thigh (of his mother), the four heavenly kings received the Bodhisattva in a piece of golden

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cloth, set him on a golden stand in front of his mother and said, "The consort has given birth to that blessed child. She must indeed be happy! All the gods rejoice – how much more (will) mankind (rejoice)!"

Beside the *stūpas* of the four heavenly kings, who took the prince in their arms, not far away, there is a big stone pillar (*da-shizhu*), (and) on top of it (they) have made a horse statue (*maxiang*); it was erected by King Asoka. Later an evil *nāga*'s ferocious thunder-clap split the pillar in the middle down to the earth. At its side, there is a small river flowing south-east (which) is called in the local tradition 'Oil River' (You-he). After Lady Māyā had delivered (the child), the gods transformed the (original) lake into a shining and pure (pond of water) in order to deliver bath water for the lady so that she could get rid of her inner and outer infirmities. It has now become a (flowing) river, but its flowing (water) is usually pinguid.

From there, going eastward about 500 *li* (through) devastated fields and wild forests, (one) reaches the country of Rāma (grāma) (Lanmo) (in the region of Middle India).[15]

Wu-Kong and Fang Chi

In 764 CE Wu-Kong mentions a great tope (*stupā*) at the spot, where the Lord Buddha was born. From Fang Chi we know that the pillar recorded the circumstances of Lord Buddha's birth.[16]

Pilgrimage of Ripu Malla

At the beginning of the fourteenth century CE Ripu Malla, a Prince of the Nagaraja dynasty of western Nepal, made a pilgrimage to the site and had this name and a prayer engraved on the uppermost portion of the eastern side of the Asoka Pillar. This is the last recorded visit to Lumbini before it was lost and forgotten in the jungles for the following five centuries. The inscription reads:

Om Mani Padme Hum
Sri Ripu Malla Chidam Jayatu
Sangrama Malla

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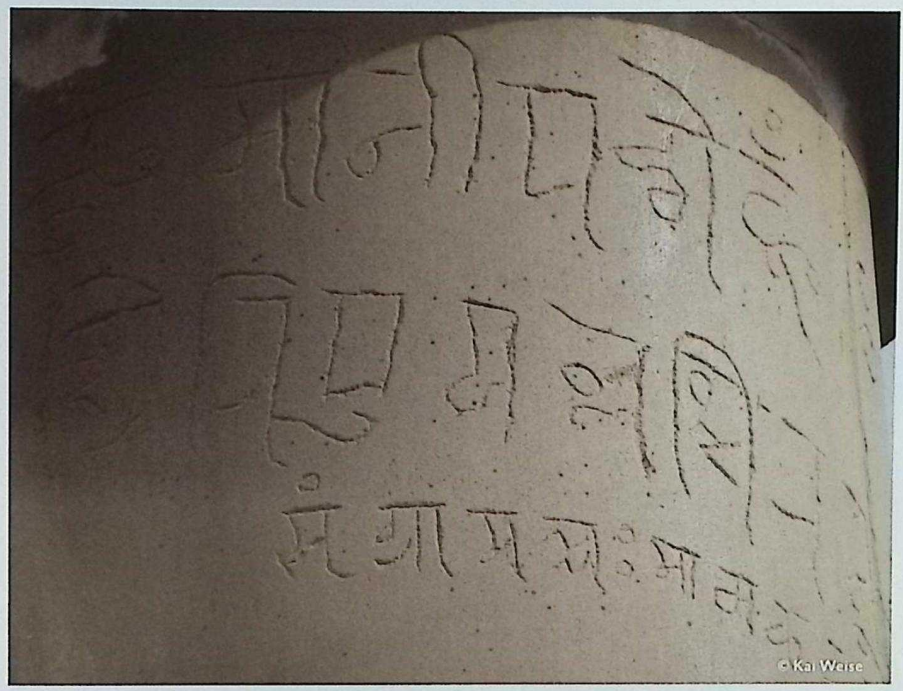

Ripu Malla inscription on the Asoka Pillar, 14th century CE

The first phrase is a Mahayana Buddhist prayer, followed by a phrase which means: "May Prince Malla be long victorious." This indicates that up to the time of Ripu Malla, Lumbini and Kapilavastu were widely known as the birthplace and homeland of Lord Buddha.

The fourteenth century CE graffiti of Prince Ripu Malla on the Asoka Pillar, demonstrates that Lumbini remained a key site well into the medieval period. Indeed, the various stages of construction with multiple phases of building and remodelling identified, are proof that Lumbini remained an important place of pilgrimage from the Mauryan period onwards. However, no written records are preserved from the time of Ripu Malla's pilgrimage until Lumbini's re-identification in 1896.

Lumbini, the most important sacred place of Buddhist pilgrimage, was slowly reclaimed by the jungle and faded from memory for a long time after the visit of Ripu Malla. Some scholars link this fact to the revival of Hinduism and Muslim

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invasions. Others have suggested that natural disasters, such as drought, famine, floods, or earthquakes caused people to abandon Lumbini. However, little research is available for this period and it would be a worthwhile undertaking to carry out further study of the history of Lumbini from the fourteenth to the nineteenth century.

The religious confusion of medieval times brought damage and neglect to Buddhist sacred places of pilgrimage and the association of Lumbini with Lord Buddha was slowly forgotten. However, the Buddha's great message survived, growing in importance through the centuries.[17]

VISITORS AFTER 1896

In the late nineteenth century, Western scholars of Buddhism, in the service of the British colonial government, were eager to find non-textual proof for the life of Lord Buddha and the events described in the relevant Buddhist texts. They soon discovered artefacts with clear inscriptional evidence revealing to them the places, in which Buddhist tradition ascribed the most important stages of the life of their founder.

One of the finest monographs that sought to bring together the textual, art, historical and archaeological evidence is certainly Foucher in 1949. While the locations of Lord Buddha's enlightenment and first sermon were identified quite early on, the question of where Lord Buddha entered into *parinirvāna* – Kushinagara – and where he was born and grew up – Lumbinī and Kapilavastu – were not solved until the end of the ninteenth century.[18]

The location of the last two places, was revealed when two Asokan inscriptions, one in Nigāli Sāgar near Tilaurakot referring to the Buddha of the past, Konakamuni (Kanakamuni), and one in Lumbini, were found. These discoveries made it very clear that this area had been a region closely connected to the early life of Lord Buddha – to his birth and his youth – in a period of less than 200 years after his parinirvāna. This delivered concrete proof that in the Mauryan period the place where the Asoka Pillar stands, was indeed considered to be the original and authentic birthplace of Lord Buddha.[19]

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The Asoka Pillar and inscription were rediscovered when on 1 December 1896 General Khadga Shamsher Rana and archaeologist Anton Führer visited Lumbini for the first time. Anton Führer's accounts have been published under the title: *Antiquities of Buddha Sakyamuni's Birthplace in the Nepalese Tarai* (1972)

Anagarika Dhammapala of Sri Lanka together with P. C. Jinavaravamsa, the Prince of Thailand, visited Lumbini on 6 April 1898. They described the mound, as being covered in bushes with the pillar protruding eight to ten feet high. They provided a rough description of the pillar, the materials, dimensions and inscriptions. The image of Mayadevi (Nativity Sculpture) was kept in a temple comprising of a single small room several feet into the mound some fifteen feet east of the pillar, supposedly erected by the Government of Nepal. The access, which required descending down some steps, was guarded by a Gurkha guard of Nepal and the image was noted as being taken care of by a Chinese Buddhist Lama. However Hindu pilgrims also offered puja and animal sacrifices to the image, considering it to be Rumindevi, a form of Bhagvati or Durga.

According to Dhammapal, in April 1898, N. Sadananda, the Resident Priest of the Mahabodhi Society of Calcutta, Sylvain Levi and Anton Führer also visited Lumbini. They also travelled to Kapilavastu, where excavations were being carried out under the supervision of Anton Führer.[20]

Purna Chandra Mukherji conducted a brief exploration and excavation visit in 1899. He identified the Saptaratha, the seven-bayed temple from the Gupta period and the sculpture with the nativity motive.[21]

Ekai Kawaguchi, a Japanese monk, who completed a pilgrimage through Nepal into Tibet in the early twentieth century, visited Lumbini in 1912. Abhi Subedi, in his book *Ekai Kawaguchi: The Trespassing Insider* explains how Kawaguchi vehemently opposed the sacrificing of animals in Lumbini and lodged a complaint with the Prime Minister Chandra Shamsher Rana. Accordingly the practice was stopped.[23]

Alexandra David-Neel, another adventurer visited Lumbini and Kapilvastu in December 1913 supposedly at the invitation of the King of Nepal, and facilitated by Tibetologist Charles Bell. He spent a night in Tilaurakot, which was populated by man-eating tigers.[24]

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The Nativity Sculpture

According to the personal visitor book of Vishnu Prasad Chaudhari, former landlord and chairperson of the Village Development Committee in Khungai, Lumbini, several famous Indian scholars including, Rahul Sankrityayana, Ramesh Chandra Majumdar and Ramkrishna Mukherji, visited Lumbini in the 1920s.

Keshar Shamsher Rana carried out major excavation work between 1933 and 1939. His main aim was the beautification of the site by levelling the ground, exposing

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some of the ancient structures, building a new temple for the nativity statue and enlarging the pool with brick steps. There are however no documents on the activities carried out by Keshar Shamsher Rana other than a few photographs.

Italian explorer Giuseppe Tucci visited Lumbini in 1952. Returning from a journey to Mustang he descended to the Terai and visited Lumbini, where he saw the Asoka Pillar and the Nativity Sculpture. He found Lumbini to be in a state of deterioration using the description: "Stone by stone, brick by brick, all the works erected in his honour have crumbled."[25]

On the occasion of the Fourth General Conference of the World Fellowship of Buddhists, held in Kathmandu in 1956, delegates expressed the urgent need to restore the Sacred Garden of Lumbini and to develop it in accordance with the historical and religious importance of the place. King Mahendra offered his assistance in providing basic facilities and recreating a Buddhist environment and a *vihara* (monastery), a rest house, roads and other infrastructure were constructed.

In 1962, Debala Mitra, Director-General of the Archaeological Survey of India, visited Lumbini and excavated a small trench to the west of the Asoka Pillar to determine the nature of the base of the pillar.[26]

The interest and involvement of the United Nations in Lumbini was established through the visit of Secretary-General U Thant in 1967. U Thant believed Lumbini should be a place where religious and secular leaders could work together to create a world free from hunger and strife. Deeply impressed by Lumbini's sanctity, he discussed with the Government of Nepal how best to develop Lumbini into an international pilgrimage and tourism centre. U Thant called upon the international community to come forward to help Lumbini at the UN General Assembly held in Geneva in 1970. The International Committee for the Development of Lumbini was formed in 1970 in New York, under the chairmanship of Nepal's Permanent Representative to the United Nations. This was followed by the United Nations commissioning Japanese Architect Kenzo Tange to prepare the Master Plan for Lumbini, which was finalized and approved by the UN and the Government of Nepal in 1978.

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CHAPTER THREE

Archaeology and site interpretation

Robin Coningham, Kosh Prasad Achary and Jennifer Tremblay

The authors would like to acknowledge the contributions of Mark Manuel, Christopher Davis, Ram Bahadur Kunwar, Ian Simpson, Armin Schmidt, Keir Strickland, Anouk LaFortune-Bernard and Basanta Bidari.

Aerial photograph of the Mayadevi Temple and archaeological remains within the Sacred Garden of Lumbini

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Re-discovering Lumbini
Archaeology and Site Interpretation

The site of Lumbini tells a story that has been unfolding for over 3,000 years. This story can be told by interpreting the archaeological evidence that has been excavated, analysed and interpreted by the multi-disciplinary team who have widened our understanding of the significance and importance of the cultural and environmental history of the site.

A history of research at Lumbini

The original search for, and rediscovery of, evidence of the historical Buddha was not a professional or scientific endeavour, being carried out by people with no formal training, representative of archaeology and antiquarian research at the time. Indeed, the development of 'Buddhist' archaeology in the nineteenth century was led by individuals drawn from the civil service and military backgrounds. These antiquarians began to uncover and record temples, monasteries, *stupas*, pillars and inscriptions from all corners of the sub-continent and, at the same time, search for and translate surviving texts that shed light on these ancient monuments. Many of these individuals, often referred to as 'Orientalists', belonged to the Royal Asiatic Society of Bengal and regularly published articles on the discovery and translation of monuments and texts.[1] Two of the most influential texts to be discovered and translated were the accounts of the Chinese pilgrims Faxian (Fa Hsien) between the fourth and fifth centuries CE and Xuanzang (Hiuen Tsiang) in the seventh century CE, who came to South Asia in search of Buddhist texts and relics during their pilgrimage through the natal landscape of the Buddha.[2] These two topographical accounts of the great monuments and Buddhist kingdoms from Gandhara in the west to Anuradhapura in the south captured the imagination of many individuals, and influenced particularly Sir Alexander Cunningham, who dedicated his professional life to the pursuit of the Buddhist landscapes described by Faxian and Xuanzang. While Cunningham, the first Director-General of the Archaeological Survey of India, was able to identify many key sites from the pilgrims' accounts, including Kushinagar and Bodhgaya, he was unable to locate the Buddha's birthplace itself.

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FIGURE 1: Remains of monasteries within the Sacred Garden of Lumbini

This situation was transformed in 1895 by the finding, and subsequent translation, of an Asokan inscription on the newly discovered Niglihawa pillar as it recorded Asoka's expansion of the nirvana *stupa* of the Buddha Kanakamuni, one of the 27 Buddhas proceeding Siddhartha. This importantly unlocked the historical topography of Nepal's Terai as the monk Faxian recorded that this *stupa* was less than one yojana west of ancient Kapilavastu, which itself was only 50 li directly west of Lumbini.[3] This proximity led Dr Anton Führer, the Archaeological Survey of India's Archaeological Surveyor of the North-western Provinces and Oudh Circle, to seek out the Nepali Governor, General Khadga Shamsher J.B. Rana, at his camp near Padariya which resulted in their joint rediscovery of ancient Lumbini. Since then, many different excavators, architects and conservators have contributed to the investigation of the site and its protection for future generations (FIGURE 1).

The process of conservation and presentation may be divided into five main stages: the re-discovery of Lumbini between 1896 and 1899; the reconstruction of the Mayadevi Temple and remodelling of the Sacred Garden between 1933 and 1962; the conservation of its monuments and ruins between 1962 and 1985; the re-excavation of the Mayadevi Temple between 1992 and 1997; and the deployment of science-based archaeological investigation between 2010 and 2013 during the Japanese-Funds-in-Trust-for-UNESCO project "Strengthening the Conservation and Management of Lumbini, the Birthplace of Lord Buddha, World Heritage Property".

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STAGE 1: REDISCOVERY

Dr Anton Führer and General Khadga Shamsher J.B. Rana (1896)

Although there is some debate as to the exact sequence of events which led to the rediscovery of the ancient site of Lumbini, most scholars accept that during Dr Führer's explorations within Nepal's Terai, he was requested to meet General Khadga Shamsher J.B Rana, the Nepali Governor of Palpa, at his camp near the village of Padariya, 21 miles to the south-east.[4] Padariya lay five miles from the Indian border and the area around it had been cleared of jungle a generation earlier. However, less than half a mile to the north-east of the village, was a "five acre thicket of trees, breaking the flat level of the surrounding plough-land, bounded by a small meandering stream on its eastern side and a small pond on the south".[5] Within this raised thicket, Führer was able to discern four mounds, on the largest of which stood a small, square brick temple dedicated to the goddess Rupadevi (FIGURE 2).[6] Anton Führer initially dismissed it as a "small modern mean-looking temple, dedicated to that goddess, which was erected by a Saiva ascetic on top of one of the ruined *stupas* about four years ago".[7] Unfortunately, Führer did not provide any plans of the site but, once inside the temple, he was able to re-identify the statue of Rupadevi as a partial scene representing Mayadevi giving birth to Sakyamuni Buddha.[8]

Adjacent to the temple, on the western side of the mound, Führer reported the presence of a "mutilated pillar rising about 10-feet above ground".[9] The pillar was missing its capital and appeared to have suffered a lightning strike at some point, as it was split down the middle, but there was a visible medieval inscription. Dr Führer and General Rana employed labourers to dig around the base of the pillar and uncovered another inscription, this one in the familiar third century BCE early Brahmi script, often associated with Asoka.[10] The identification of the site of ancient Lumbini was made possible in the first two lines of the inscription, which were translated as: "Beloved of the gods, King Piyadasi (Asoka) when 20 years consecrated came to worship saying here the Buddha was born Sakyamuni".[11] Although some have attributed the rediscovery of Lumbini to Führer, the site and the pillar were already known to General Rana who had sent rubbings of the medieval inscription to the historian Vincent Smith some years earlier.[12]

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FIGURE 2: Photograph of the Mayadevi Temple on its mound of ruins as rediscovered in 1899. From: *A Report on a Tour of Exploration of the Antiquities in the Terai, Nepal by Purna Chandra Mukherji, Calcutta, 1901*

With the discovery of Lumbini, and the discovery of the *stupa* of the Kanakamuni Buddha at Niglihawa, Anton Führer felt that he had all of the clues that he needed to locate ancient Kapilavastu, the childhood home of the Sakyamuni Buddha. Using the Chinese pilgrims' accounts, Anton Führer announced that Kapilavastu lay 18 miles north-west of the Lumbini Pillar and six miles north-west of the Nigalihawa Sagar Pillar and swiftly published his discovery of the capital of the Shakyas.[13]

Purna Chandra Mukherji (1899)

Shortly after Anton Führer announced his discovery of Kapilavastu, his work came under close scrutiny and he resigned from his post as Archaeological Surveyor of the North Western Provinces and Oudh. In order to investigate the quality of Führer's

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discoveries, the Government of North Western Provinces and Oudh commissioned Colonel Waddell, and Purna Chandra Mukherji of the Archaeological Survey of India, to explore the Nepal Terai and plan and excavate the Buddhist sites within it.[14] P.C. Mukherji was subsequently commissioned to plan and excavate Lumbini, Sagarhawa (the site identified by Führer as the Sakya Massacre), Kudan and research the location of the long lost city of Kapilavastu at Tilaurakot.[15] At the latter, Mukherji and a small group of workers began to excavate and map the ruins of a fort or *kot* on the east bank of the Banganga River, soon exposing extensive citadel walls as well as several *stupas* and *viharas* surrounding it.[16]

P.C. Mukherji also explored Lumbini in 1899, which was covered in saplings and trees, and excavated the southern side of the Mayadevi Temple and exposed courses of carved bricks. Providing the first plans for the temple, he located seven minor projections on each side, which indicated that the temple has been planned according to the Silpashastra, the classical text on architecture, as a *Saptaratha* or 'seven-bay temple'. He successfully interpreted the narrative of the nativity sculpture, where Mayadevi is represented holding on to a branch of a tree at the time of delivery, while other attendants are variously helping her, the infant Buddha is depicted standing between them.[17]

While working in Lumbini, P.C. Mukherji prepared the first plans of the standing ruins of the site as a whole as well as excavating several trenches around the Asokan Pillar and the Mayadevi Temple, atop of which the small modern temple dedicated to Rupadevi had been erected (FIGURES 3&4). Mukherji's brief report describes Lumbini's full potential as an "ancient site [that is] full of ruins. Wherever I excavated, walls of ancient structures were brought to light". However, Mukherji's recording and excavating technique was not particularly thorough, reflecting the practice of archaeology at the time, and thus he concentrated on describing the Asokan inscription, the decorative plinth of one phase of the Mayadevi Temple and the Gupta period sculpture within the Mayadevi Temple. After Mukherji's initial excavations in 1899, the site of Lumbini remained relatively untouched until the 1930s, when General Keshar Shamsher J.B. Rana, a nephew of General Khadga Shamsher Rana who had directed Anton Führer to Lumbini, carried out large scale excavations and reconstruction at the site.[18]

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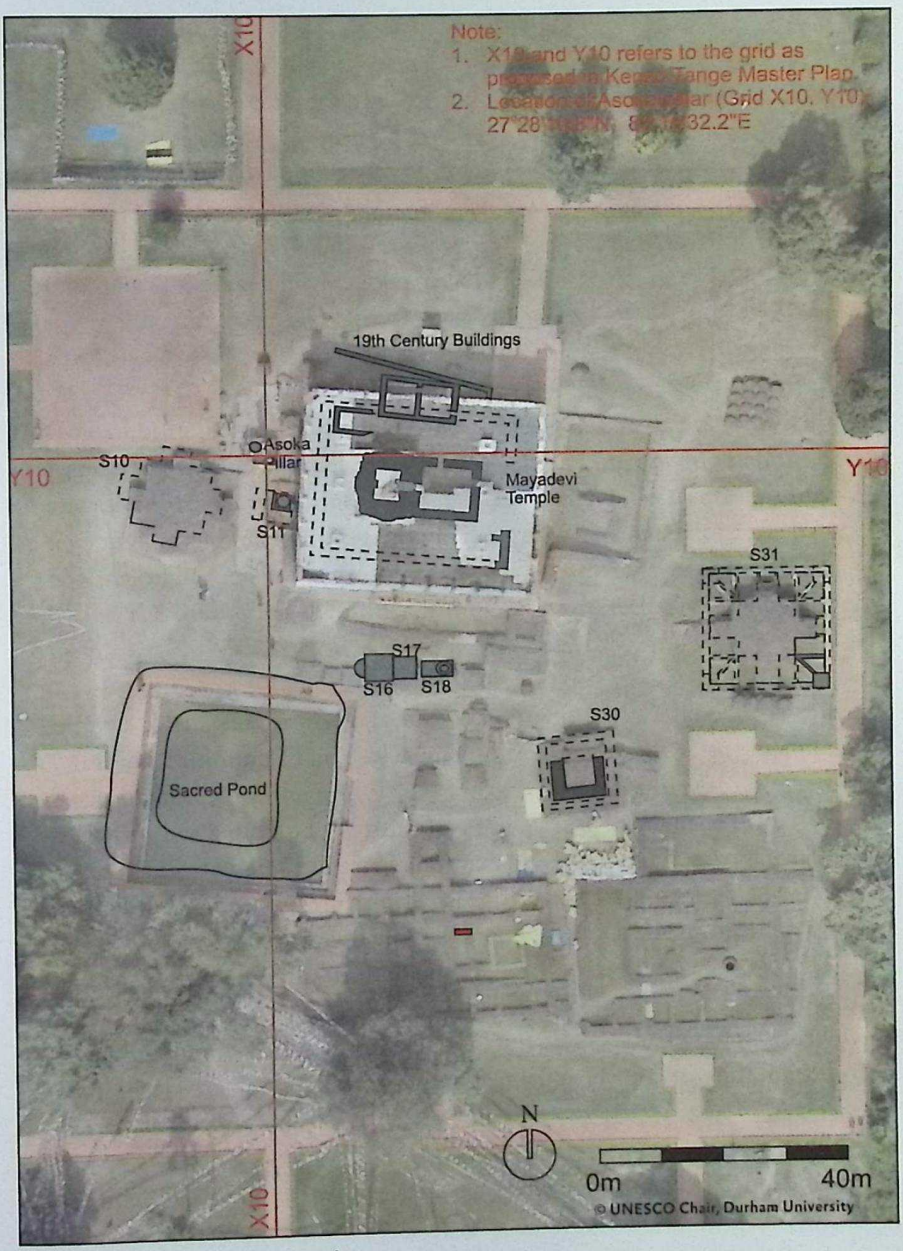

FIGURE 3: **P.C. Mukherji excavation**
Remains of structures and monuments revealed within the Sacred Garden of Lumbini by P.C. Mukherji in 1899

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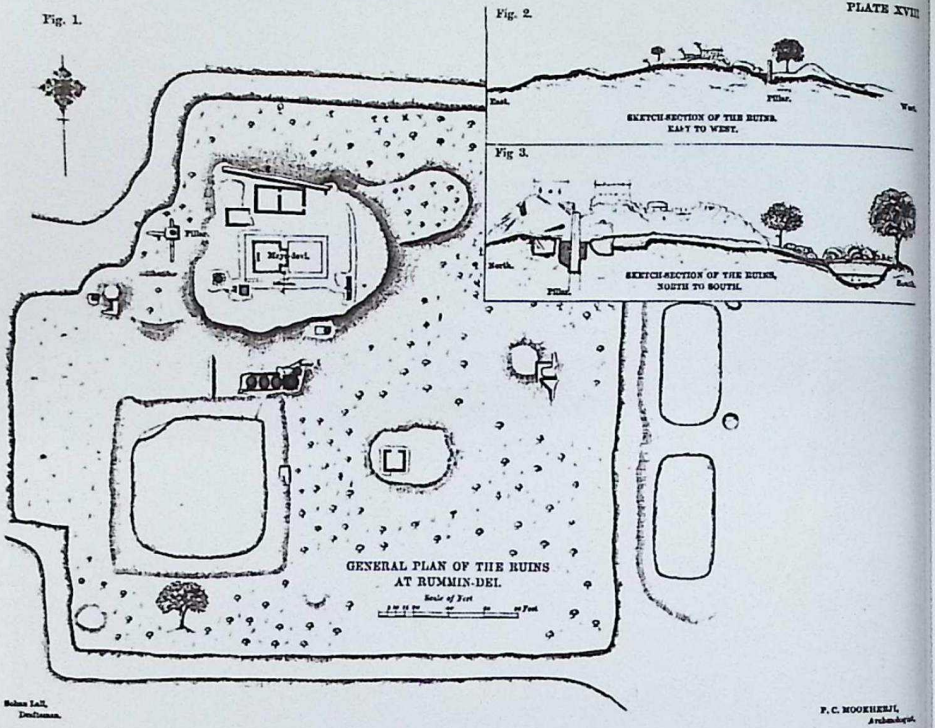

FIGURE 4: Plan of the site of Lumbini as prepared by P.C. Mukherji in 1899, complete with two sections across the mound.

STAGE 2: RECONSTRUCTION AND REMODELLING

General Keshar Shamsher J.B. Rana (1933-1939)

Once P.C. Mukherji's findings had been published and widely confirmed (1901), his discoveries inadvertently led to the clearing and removal of the accumulated debris burying the Sacred Garden of Lumbini. This work uncovered further ruins, creating an artificial landscape in which centuries of site development and phases of construction were exposed simultaneously. This work was largely carried out by General Keshar Shamsher J.B. Rana, Governor of Palpa, who conducted major excavations in and around the ruins of Lumbini between 1933 and 1939.

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Unfortunately, there is little to report concerning his excavations as there is almost no surviving documentation. However, his intervention had an enormous impact, which can still be seen today, as he removed metres of the later deposits covering the site. As is clear from photographs taken in the early 1930s, Lumbini was in need of conservation but the techniques and methods utilised by the General involved the removal of many of the existing structures and their reconstruction. For example, he demolished a number of the smaller *stupas* that surrounded the original Mauryan *stupa* (S-6) and much of the ornately decorated plinth and brick platform of the Gupta period Mayadevi Temple.[19] He also dismantled the nineteenth century Hindu temple and replaced it with a new shrine set on a modern brick platform. This phase, of which we have very little record, changed not only the site itself but also significantly altered its public image. It was no longer an overgrown mound of ruins hidden in the Terai but a curated site with the temple and a lone tree to its west as the single focal point, the other trees and saplings having been removed. General Rana also dug out and re-shaped the Pushkarini Pond into a rectangle with steps, similar to a bathing ghat, and used the backfill from his landscaping to create two new earthen *stupa*-like mounds to the north and south of the new temple (FIGURE 5). These mounds were later removed as they were confusing to pilgrims, who thought that they were ancient Buddhist *stupas*.

King Mahendra (1956)

Following requests arising from delegates to the Fourth World Fellowship of Buddhist Conference held in Nepal in 1956, King Mahendra promoted the provision of new pilgrim facilities at Lumbini. As a result, a new Thervada Temple was built to the east of the Mayadevi Temple in 1956 by the Dharmodaya Sabha, which had been founded in 1944 with the ambition of being an umbrella organisation for all Buddhist in Nepal. In addition, a new rest house, high school, dispensary and road were constructed and the King himself visited in 1956 and erected his own pillar between the Mayadevi Temple and the Village Mound. The ancient site remained in this state until 1962, when the Archaeological Survey of India returned to the Terai to investigate the Birthplace of the Buddha and the natal landscape, equipped with new archaeological techniques that had been developed in India over the preceding six decades.[20]

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FIGURE 5: General Keshar Shamsher J.B. Rana had the loose brick rubble and soil across Lumbini gathered up into two stupa-like mounds, shown here in 1969.

Debala Mitra (1962)

This joint project between the Archaeological Survey of India and the Government of Nepal's newly established Department of Archaeology was led by Dr Debala Mitra, a Director and later Director-General of the Archaeological Survey of India. The project surveyed over 30 sites in the Nepal Terai and carried out excavations at Tilaurakot, Kudan and Lumbini. Debala Mitra's excavations at Lumbini in 1962 were limited to an investigation of the western side of the Asokan Pillar, in order to ascertain its base. She noticed that the pillar had a Mauryan polish typical of finished stone from a quarry in the neighbourhood of Chunar, near Varanasi in India's state of Uttar Pradesh. She wanted to expose the base of the pillar in order to determine the length of its unpolished portion but was unable to excavate beyond 51 cm below the polished portion due to concerns regarding the pillar's stability, which was already recorded as tilting. However, she succeeded in preparing an

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inventory of a number of the key artefacts excavated by General Keshar Shamsher J.B. Rana in Lumbini.

Debala Mitra's observations of the site's condition were concerning, recording that "practically nothing has been done to conserve the monuments of Lumbini".[21] For example, she noted that a group of sixteen small votive *stupas* which she saw during a visit in 1957 had been completely demolished and that several of the structures exposed by Mukherji in 1899 could no longer be found. Debala Mitra also criticized the excavations of General Keshar Shamsher J.B. Rana stating that the unscientific technique employed had led to the damage and wholesale destruction of many structures.[22] While some of the artefacts uncovered during the General's excavations had been curated in the home of a Buddhist monk, a member of the Lumbini's branch of the Dharmodaya Sabha, unfortunately no other information regarding their original contexts or exact locations was available.[23] After Mitra's brief work at Lumbini in 1962, the site remained in a largely unchanged state until 1967 when UN Secretary-General U Thant visited Lumbini (FIGURE 6).

STAGE 3: CONSERVATION

Department of Archaeology, Government of Nepal (1972-1985)

The visit of UN Secretary-General U Thant to Lumbini was a major catalyst for the development of the site into a tourism and pilgrimage centre. The newly formed Lumbini Development Committee engaged the Japanese architect Kenzo Tange to develop a plan which saw the site divided into three distinct areas, linked by walkways and canals. At the southern end of the site, the Sacred Garden was focused on the key archaeological monuments and this area was linked to a secular administrative and visitor induction zone to the north by a monastic area in the middle. As a result of these major design initiatives, archaeological excavations were restarted by the Government of Nepal's Department of Archaeology in 1970 and 1971, with the principal aim of locating the Lumbini Village, mentioned in the inscription on the Asokan Pillar.[24] The village, Lumbinigame, was identified around and under Lumbini's police station housed in the old Rana period rest house and the excavations indicated that the earliest habitation probably dated to the sixth century BCE.[25]

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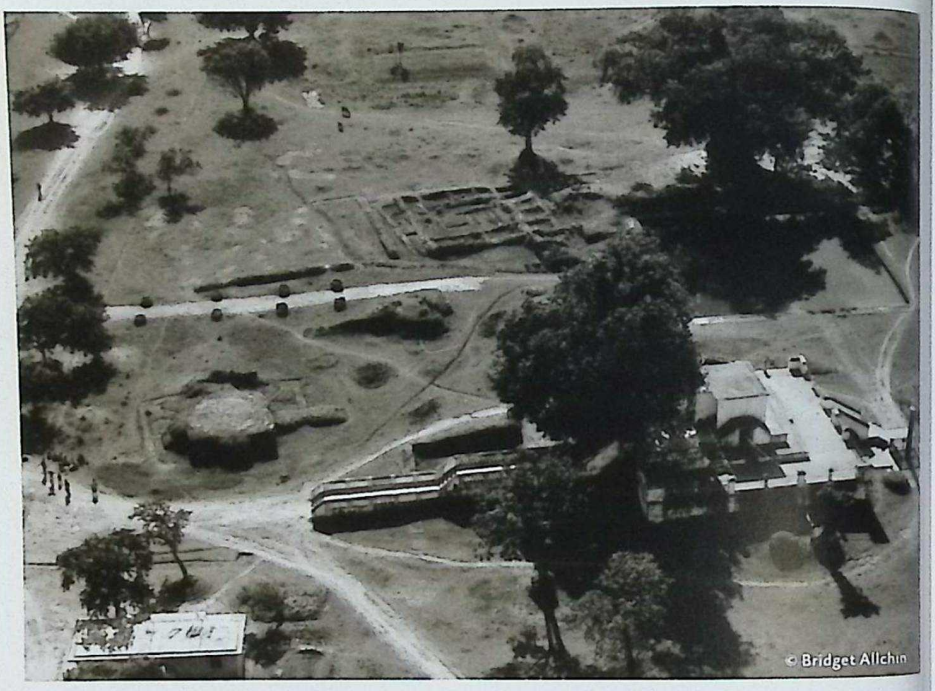

FIGURE 6: Raymond Allchin's photograph of the Sacred Garden of Lumbini in 1969 showing the Mayadevi Temple and Asokan Pillar to the right.

After conducting excavations almost every year from 1975 to 1983, Nepali archaeologis B.K. Rijal and the Lumbini Development Committee were able to establish a cultura sequence for the site, beginning with a period in the first half of the first millennium BCE, associated with Northern Black Polished Ware.[26] In 1984 and 1985, a second Nepali archaeologist, Tara Nanda Mishra, conducted additional excavations around the Mayadevi Temple complex, constructing a stratigraphic sequence of six layer beginning with Northern Black Polished Ware and ending with the Khasiya Mall period between the ninth and fourteenth centuries CE.

The two decades following U Thant's visit were mainly focused on repair and conservation, largely concentrated on the Mayadevi Temple, and its surrounding monuments. This was required as the monuments exposed and repaired by Genera Rana had been slowly eroded by seasonal rains, wearing away the fragile brickwor and some of the archaeological remains had been removed and used by pilgrims an

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labourers for temporary ovens and new structures. Immediate action was needed to prevent further destruction and it was during this time that the Master Plan was conceived of, designed and implemented. Thus, the archaeological activities of the 1970s and 1980s were focused on the standing remains as Mishra and Rijal both restored and rebuilt the majority of the structures at the site. Whilst this work helped to secure the structures from further harm, the reconstruction was based on hypothetical interpretations of buildings from fragmentary plans. Moreover, much of the conservation was carried out using materials that Rijal and Mishra sourced from heaps of old brickbats, parts of collapsed remains, and accumulated on-site debris. Many of these materials were of a Mauryan period and, as a result, many monuments at Lumbini have a uniform appearance and it has become difficult to identify or examine the various early stages of construction. The first stage of the Master Plan involved the construction of a levee and water body around the central archaeological site, dividing Lumbini into the planned three zones, thereby changing the way in which the site was accessed and viewed.[27] The next stage in the conservation and excavation of Lumbini began in 1990 when the Japanese Buddhist Federation and the newly named Lumbini Development Trust proposed a major restoration project at the Mayadevi Temple.[28]

STAGE 4: RE-EXCAVATION

Japanese Buddhist Federation and UNESCO (1992-2001)

In 1990, the Japanese Buddhist Federation and the Lumbini Development Trust agreed to undertake a large scale excavation of the Mayadevi Temple, with the primary objective of restoring the temple to its original form, and protecting it from damage caused by tree roots. This work began in 1992 with the dismantling of General Rana's modern temple and excavation down to the Mauryan occupation period (FIGURE 7). A small area in the north-west was left unexcavated to demonstrate the site's stratigraphy. The excavations were supported by the Department of Archaeology and continued up to 1996. They revealed that the temple mound included the foundations and ruins of a number of different construction periods, the earliest of which utilized burnt bricks and was dated by the excavators to the third century BCE (FIGURE 8). One of the most important discoveries from these

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FIGURE 7: Photograph of the Mayadevi Temple structure constructed by General Keshar Shamsher J.B. Rana in the 1930s.

excavations was the finding of a conglomerate, dubbed the Marker Stone, which h been interpreted by many as representing the exact birthplace of Lord Buddha. Th excavations also recovered a terracotta plaque depicting the 'Great Renunciation' Siddhartha Gautama, terracotta human and animal figurines, beads and bangle stone objects and punch-marked and other coins. Following the completion of th excavation programme, the Mauryan remains were protected by refilling the deep trenches with sand and brick, and erecting a temporary shelter of scaffolding ar corrugated iron sheets.[29] Although preliminary reports were circulated in 2001 ar 2005, the full final report of the excavations and its findings remains unpublishe

Lumbini was declared a UNESCO World Heritage Property in 1997, and the ne challenge of the Japanese Buddhist Federation and Lumbini Development Tru was the conservation of the newly exposed structures within the Mayadevi Temp While the Japanese Buddhist Federation wanted to backfill the remains, insisti that this was the only way to properly preserve them, the Lumbini Developme

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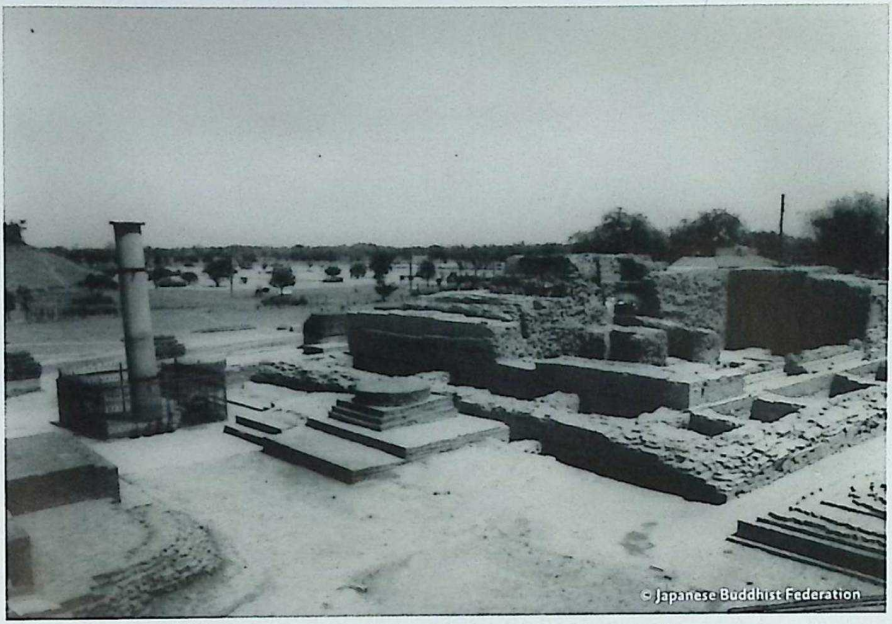

FIGURE 8: Photograph of the Asokan Pillar standing next to the exposed brick foundations of the Mauryan Period Mayadevi Temple after the Japanese Buddhist Federation completed their excavations.

Trust wanted to protect the ruins within a permanent structure and display them to the public.[30] As a result, a 'Reactive Monitoring Mission' of Lumbini was dispatched by UNESCO in 2000 to assess the state of the site. The mission advised that the proposal for a new solid structure might damage the remains and would certainly alter the appearance of the Sacred Garden. The mission recommended that in order to preserve the authenticity of the site, any alterations should follow a set of eight criteria: non-intrusive; reversibility; shelter; visibility; focus; access; worship; and the use of authentic materials.[31] During a subsequent UNESCO mission in 2001, conducted by Robin Coningham and Armin Schmidt, an environmental and geophysical survey of Lumbini was carried out, involving magnetometry, resistivity, auger coring, and several months of temperature and humidity observations. Confirming that the Mayadevi Temple and Sacred Garden had been continuously occupied and remodelled over the millennia, they warned that the digging of foundations necessary for the construction of a permanent shelter over the Mauryan period Mayadevi Temple could irreversibly damage the earliest layers of the site, including

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FIGURE 9: The brick Foundations of the Mauryan Period Mayadevi Temple at Lumbini

levels associated with the life of the Buddha himself. Their geophysical surveys also demonstrated that there were archaeological structures below the surface of the modern police station and their auger profile suggested that the Sacred Garden stood on an underlying natural rise of thick clay sediments beside probable river palaeochannels.

Despite these findings, damage to the temporary shelter from high winds and extreme weather conditions led to the construction of permanent steel and brick construction over the Mauryan Temple's foundations while the Marker Stone inside was sealed under a bulletproof sheet. The new protective building was completed in 2002 and, as anticipated by earlier UNESCO technical advisers, resulted in the creation of an adverse micro-climate within the temple. Increased levels of humidity, exacerbated by growing numbers of visitors and pilgrims, began to accelerate biological growth on both the Asokan brick surfaces and the Marker Stone. To make matters worse, the fluctuating water-table resulted in the newly exposed brick walls of the Asokan Temple becoming saturated and subject to damaging salt efflorescence (FIGURE 9).

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STAGE 5:

"STRENGTHENING THE CONSERVATION AND MANAGEMENT OF LUMBINI, THE BIRTHPLACE OF LORD BUDDHA, WORLD HERITAGE PROPERTY"

Japanese-Funds-in-Trust-for-UNESCO (2010-2013)

In reaction to these potentially irreversible developments, and other challenges facing the development of an Integrated Management Plan, the Government of Nepal and UNESCO jointly secured support and funding from Japanese-Funds-in-Trust in 2010 for the preservation of the World Heritage Site. Directed by Professor Yukio Nishimura of Tokyo University, the UNESCO project was titled "Strengthening the Conservation and Management of Lumbini, the Birthplace of Lord Buddha, World Heritage Property" and focused on five main components: the conservation of the Asokan Pillar, the Marker Stone, the Nativity Sculpture and brick structures; the evaluation, definition and interpretation of the archaeological signature of the site; the finalisation of the Kenzo Tange Master Plan; the development of an Integrated Management Plan; and capacity building for individuals working at the site. As the first two activities necessitated the exposure and study of the Asokan Temple walls within the modern building, the subsequent science-based archaeological investigations and analysis have provided evidence of a unique sequence of construction within the Mayadevi Temple. This sequence, discussed in more detail below, proves that the site of Lumbini was inhabited as early as 1300 BCE with the establishment of a village on a low natural mound, now under the modern Police Station. The area now known as the Sacred Garden has also yielded evidence that it was cultivated at this time and that later, directly below the modern Mayadevi Temple, a small wooden enclosure was constructed on an artificial clay mound in the sixth century BCE.

While the conservation programme was designed by Dr Costantino Mucci, the archaeological activities were directed by Kosh Prasad Acharya, Nepal's former Director-General of Archaeology, and Professor Robin Coningham of Durham University, with colleagues from the Department of Archaeology, Lumbini Development Trust, Durham University, the University of Stirling and Tribuvan University (FIGURES 10 & 11). The generous funding from the Japanese Government

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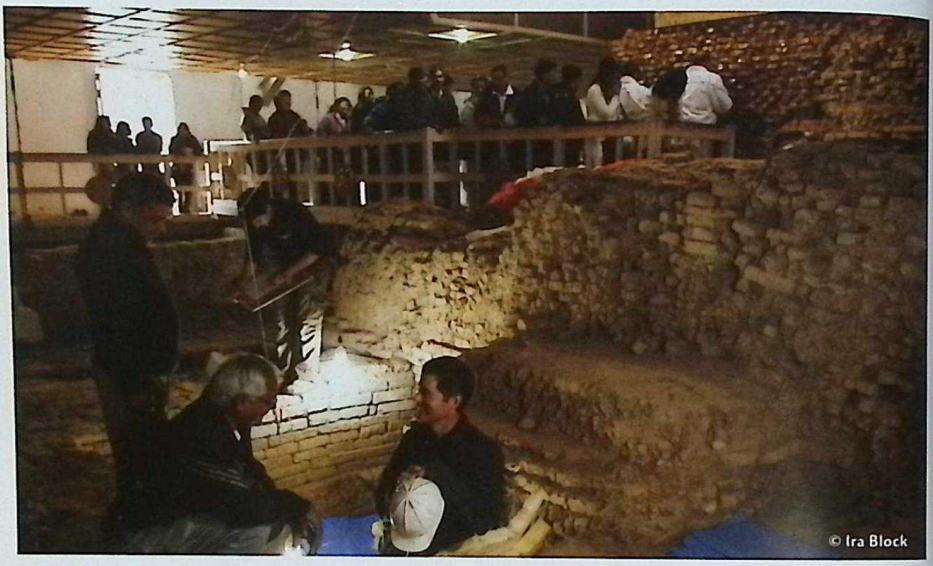

FIGURE 10: Sri Kosh Acharya and Professor Robin Coningham, directors of the excavations inside the Mayadevi Temple, discuss stratigraphy with Mr Basanta Bidari of the Lumbini Development Trust.

FIGURE 11: Sri Kosh Prasad Acharya explains the results of the new excavations within one of the monastic cells in the Sacred Garden of Lumbini to the Hon. Minister Gopal Kirati and Ven. Acharya Karma Sangbo Sherpa, Vice-Chair of the Lumbini Development Trust in 2013.

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FIGURE 12: Undertaking a geophysical survey of the Sacred Garden of Lumbini with a Ground Penetrating Radar (GPR).

was supplemented by contributions from Durham University, the National Geographic Society and the Oriental Cultural Heritage Sites Protection Alliance with co-ordination provided by UNESCO and guidance from UNESCO's International Scientific Committee for Lumbini. In addition to an enhanced understanding of the archaeological and constructions sequence at Lumbini, information from the intrusive archaeological and non-intrusive geophysical surveys have been used to develop Archaeological Risk Maps for the Sacred Garden (FIGURE 12). By recording and mapping the spread, variety and depth of cultural material, these Archaeological Risk Maps now help to guide the management and development of the site to aid the locating of facilities and amenities for visitors so as not to detrimentally affect the subsurface heritage (FIGURE 13 & 14).

Lumbini's Archaeological Risk Maps identify areas which are of high archaeological significance and where development should be avoided as opposed to areas of low archaeological importance, where necessary development and infrastructure could be focused. These maps use a combination of visual colour grading of different areas, supported by a more in-depth discussion of exactly what material is present,

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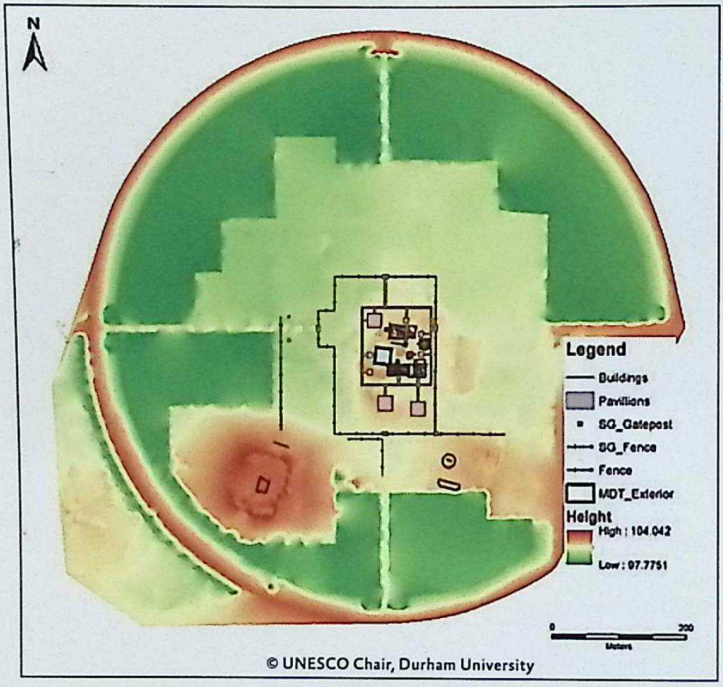

FIGURE 13: Topographical map of the Sacred Garden of Lumbini with Village Mound to the south-west

and guidelines on what activities should and should not take place within them. For example, areas of Very High Risk are areas which contain the most important archaeological remains at the site, and are of significance not only for understanding the development of each site, but also the wider archaeology of the region. There should be no further development in these areas, and any existing modern structures should, wherever possible be removed. No trees should be planted in these areas, and the landscapes should be kept as pristine and unaltered as possible. Other areas, such as much of the outer part of the Sacred Garden within the Levee, are considered to be Very Low Risk and the designation states that these areas contain no known archaeological remains, and any developments that are required should be focused in these areas. However, even these areas are to be cautiously approached and any development should be non-intrusive, fully reversible and use appropriate materials. Landscapes should be kept simple, and any alterations should be confined to the

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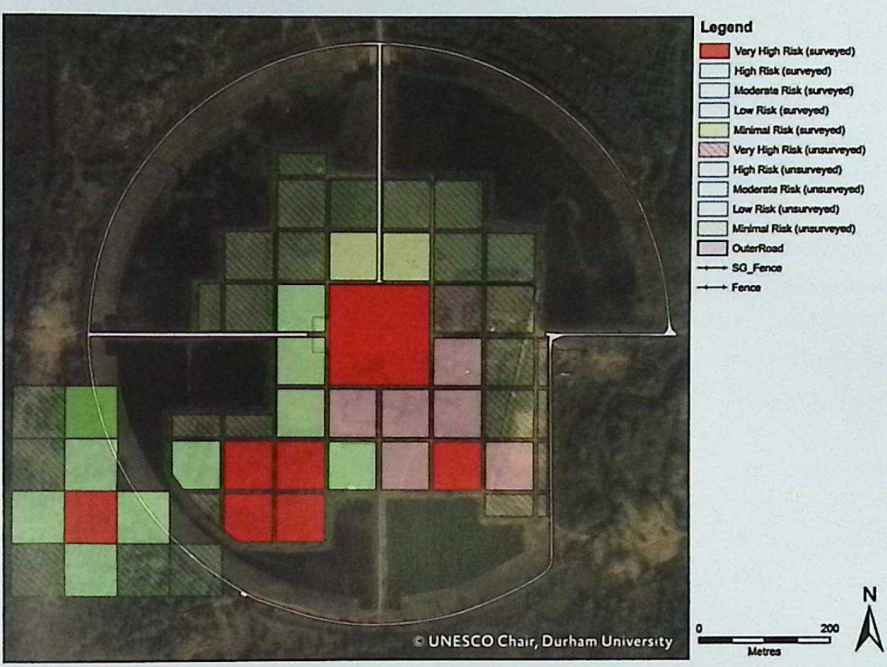

FIGURE 14: Archaeological Risk Map of the Sacred Garden of Lumbini

upper 50 centimetres of the soil. In both cases, all intrusive and planned activities within the areas should first be approved by the archaeologists and, if necessary, a watching brief should be agreed, whereby archaeologists will accompany the digging of shallow ditches or drains in order to halt activities should archaeology be encountered.

The architect Kenzo Tange was always clear in his Master Plan that if archaeological remains were encountered during construction work "the present layout can be modified without altering the basic system".[32] Archaeological Risk Mapping at Lumbini has aided the development of enhanced management guidelines and their application has resulted in the creation of new walkways within the sacred Garden of Lumbini. Led by the University of Tokyo, and co-designed, with colleagues from the Lumbini Development Trust, the Department of Archaeology and Durham University, the new walkway for pilgrims around the Mayadevi Temple and the

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Sacred Garden was constructed using terracotta tiles and raised up above the archaeology rather than being cut into the surface layers. Prayer platforms were also provided to allow spaces for groups to congregate away from vulnerable monuments. This raised walkway complex has mitigated many of the challenges surrounding the use of inauthentic materials in the Sacred Garden as well as demonstrating the successful use of non-intrusive and reversible facilities which has aided access, worship and pilgrimage to the Sacred Garden area. These examples illustrate how archaeology can be utilised in the development of sustainable pilgrimage sites, facilitating development that is not detrimental to the archaeological remains, whilst also not impinging on the pilgrim and visitor experience.

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CATEGORIES OF MONUMENTS AT LUMBINI

During Lumbini's multiple periods of occupation, a number of different structures were built and rebuilt, including *stupas*, *viharas*, *chaityas*, wells, tanks and temples. However, there is no clear criteria for identifying these different types of structures in Lumbini and, as a result, archaeologists have labelled them differently. In a publication by Basanta Bidari in 2002, a plan of the site was provided in which the monuments of the site were labelled. This plan separates structures into *stupas*, monasteries (*viharas*), and buildings, and assigns each structure a number. For the purposes of this publication, we will adopt these assignments. This helps us avoid the problems raised by previous studies, such as those by Rijal, Mishra and the Japanese Buddhist Federation, which described monument size, shape, decoration, orientation, and distance and direction in relation to one another. The problem being that as new structures have also been uncovered, reconstructed, or even created on a regular basis on site, the confusion caused by earlier descriptions has meant that the history of several *stupas* is now in question because it is not clear which structure is being described. Furthermore, the fact that none of the excavation reports have provided a complete record of finds, contexts, site plans, or even an explanation of all work carried out has not helped this matter. Finally, differences in definitions of the types of structures has led to the situation that it is sometimes unclear precisely what the excavator believes the described monument to be, or how this compares with previous authors' explanations. Rijal, for example, describes many monuments as *chaityas*, which can mean any structure that marks a sacred spot, whereas Mishra labels them as temples. To avoid such confusion, below is a brief outline of the types of structures at Lumbini, and a definition of the terms as used hereafter.

Viharas

Viharas, or monasteries, were the living and meditation places of monks and nuns and were usually organised as a group of cells or rooms surrounding a central courtyard. Mitra first mentioned a *vihara* at Lumbini in 1962, when she discovered a quadrangular brick monastery with an array of cells on four sides near the south-east corner of the bathing pool.[33] The same structure was fully uncovered by Mishra in the 1980s and subsequently three other *viharas* were discovered in the same area, with various phases of brick construction dating from the Mauryan period to the Gupta period. We now know that the brick *viharas* were preceded by a series of

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timber structures below dating to the sixth century BCE, indicating that this area was first occupied at the same time as the timber enclosure at the bottom of the Mayadevi Temple sequence.

Stupas

A *stupa* is the most distinct and resilient of Buddhist monuments and can be defined as a mound of brick, stone or earth that enshrines a relic or marks a sacred place.[34] There are typically four different categories of *stupas*: those containing the corporeal relics of the Buddha (*saririka*), his disciples and saints; those containing objects of use, such as the Buddha's begging bowl (*paribhogika*); those commemorating incidents from the Buddha's life or places visited by him (*uddesika*) and, finally, votive *stupas* built by pilgrims and monks as a way of obtaining merit.[35] While excavations into some brick *stupas* in India have provided evidence of early clay constructions, perhaps pre-Asokan, no such investigations have been conducted in Lumbini, and its *stupas* have been attributed to between the Mauryan Period and the modern period. Most of the monuments appear to have been votive, built by pilgrims and monks over centuries; although one *stupa* (S-6) has been identified as belonging to the first category of *saririka stupas* and this will be discussed in greater detail below.[36] As *stupas* are very distinct structures from the other monuments in Lumbini, there has been relatively little confusion regarding their identification over the years.

Chaityas

Although many researchers working in Lumbini have made reference to the presence of *chaityas*, the use of this term in identifying a category of Buddhist monuments is complex as a *chaitya* refers to any structure that marks a sacred place. This sacred spot could be associated with a relic or an event and some scholars have referred to both *stupas* and temples as *chaityas*. For example, the shrine, which was built over the Marker Stone in the second period of brick construction at the Mayadevi Temple has been described by some scholars as a *chaitya*, but so has the temple itself. Within the numerous excavation reports from Lumbini, the term *chaitya* seems to have been used as a catch-all word to describe any sacred monument that has not been identified as a *stupa* or *vihara*.

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FIGURE 15: Photograph of the Kushana Period brick well in the Lumbini Development Trust's Nursery to the south-west of the Village Mound.

Wells

A number of wells have been excavated at both the Village Mound and within the Sacred Garden. Unfortunately, there is almost no information available on the results of the earlier excavations at the Village Mound, although Rijal did mention the presence of a terracotta ring-well in the earliest phases of the site. He also referenced the discovery of a Kushan period well close to the modern Lumbini Development Trust Nursery. UNESCO-sponsored excavations at the site have confirmed the date attribution of this well and more detail is offered below (FIGURE 15). Bidari has suggested that these wells may be indicative of Lumbini's role as a waypoint in the ancient trade routes which passed through the Terai.[37] Additionally, when the water of the Sacred Pond was drained in 1993, two artesian wells were discovered in the north-east and south-east corners of the pond.

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LUMBINI'S CULTURAL SEQUENCE

As discussed above, the site of Lumbini has undergone numerous excavations and investigations since its rediscovery in the late nineteenth century. Before the recent UNESCO-sponsored excavations, there were no scientific dates for structures and little explanation of the methods used, artefacts unearthed or contexts explored. In addition, as outlined above, there is no single accepted system for identifying Lumbini's structures and very few authors have published maps, sketches, plans or photographs, which makes a re-examination of their findings almost impossible. Finally, as noted already, the conservation carried out on the site has radically changed the way in which the site is viewed and the reuse of materials such as archaeological brickbats to repair and reconstruct the monuments, has given them a uniform appearance making it very difficult to date and phase them as they now stand. While we fully acknowledged the challenges of articulation between our own set of scientific dating methods and earlier reports using traditional cultural periods, we have attempted to combine them to advance this new occupation sequence for the site of Lumbini. Our new sequence demonstrates that Lumbini's archaeological sequences remain well preserved and present a history stretching back to c.1300 BCE.

Occupation Period	Era	Date
Period I	Late Chalcolithic	c.1300 to sixth century BCE
Period II	Early Historic	Sixth to third century BCE
Period III	Mauryan	Third to second century BCE
Period IV	Sunga	Second to first century BCE
Period V	Kushan	First to second century CE
Period VI	Gupta	Third to ninth century CE
Period VII	Medieval	Ninth to fourteenth century CE
Period VIII	Early Modern	Fifteenth to nineteenth century CE
Period IX	Modern	Nineteenth to twentieth century CE

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LUMBINI THROUGH THE AGES

Period I: Late Chalcolithic Lumbini (c.1300 to sixth century BCE)

Lumbini's Village Mound

New investigations carried out by Durham University, the Lumbini Development Trust and Department of Archaeology between 2011 to 2013 within the Sacred Garden and the Mayadevi Temple have greatly advanced knowledge relating to early Lumbini, tracing occupation within the vicinity of the site back to the late Chalcolithic period c.1300 BCE. This earliest evidence was derived from excavations at Lumbini's Village Mound, where trenches were opened at the side of the newly cut levee and on the top of the mound within the police station parade ground next to the old Rana Rest House (FIGURE 16). The latter trench was 4.5 metre deep and yielded evidence of a sequence of human habitation between c.1300 BCE and sixth century CE.

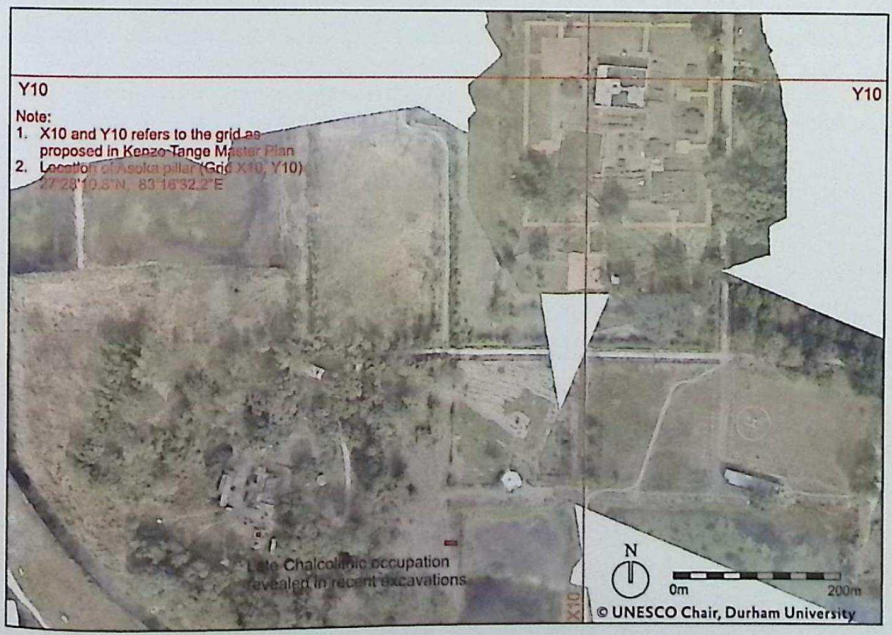

FIGURE 16: **Late Chalcolithic**
Remains of structures and monuments within the Sacred Garden of Lumbini

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FIGURE 17: The excavation at the Police Parade Ground demonstrated the deep antiquity of the Village Mound and confirmed that Lumbini was first occupied in c.1300 BCE.

The earliest occupation evidence at Lumbini's Village Mound corroborates t
early dates of occupation in the vicinity of the *stupa* at Gotihawa near Tilaurako
and suggests that the Terai had already been settled by sedentary agricultur
communities by the beginning of the first millennium BCE (FIGURE 17). Th
archaeological sequence of the Village Mound suggests that it was a settlement s
with evidence of residential house floors, metal-working and domestic waste. Th
low clay mound on which the settlement was established, rose above the flood pla
and research has identified the presence of a silted river channel dating to this ti
running to the north-west of the Mayadevi Temple complex. There is no eviden
of settlement in the vicinity of the temple at this time, but soil micromorpholo
has identified that this area was under cultivation, perhaps by villagers living
the ancient Village Mound.

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FIGURE 18: Photograph showing the north-south posthole alignment which represents the earliest structure within the Mayadevi Temple and dates to the sixth century BCE.

Period II: Early Historic Lumbini (sixth to third century BCE)

Phase 1: The first wooden enclosure at the Mayadevi Temple

Whilst occupation at the Village Mound was to continue until the sixth century CE, soil micromorphology analysis from within the lowest levels of the trenches cut under the Mayadevi Temple suggest that a low mound was artificially raised in its vicinity by depositing alluvial soil. The first evidence of structural activity at the site of what was to become the Mayadevi Temple occurred in the middle of the sixth century BCE with the cutting of a straight line of post holes defining the centre of the mound (FIGURE 18). Soil micromorphology indicates that the central area of the temple mound, defined by a wooden fence or railing, was void of structures and

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FIGURE 19: Pre-Asokan brick on edge kerb around the central focus of the Mayadevi Temple partially truncated on the left by the later, but deeper, foundations of the Mauryan Period Temple.

the stratigraphy and soil sections suggest the presence of root systems, suggesting that a tree grew at this location. Evidence of broken vessels and charcoal outside the fence line, suggest that activities conducted here were defined by the creation of a sacred space. This cardinally-oriented open space at the heart of the Mayadevi Temple appears to have remained a feature of the structure until a major remodelling of the site in the Sunga Period (Period IV), when this previously open space was sealed below a new brick feature.

Phase 2: The open-air brick platform at the Mayadevi Temple

The wooden railing surrounding the centre of the Temple Mound was later replaced, or rather reproduced in a more permanent form, with the construction of a double kerb of bricks standing on their edges (FIGURE 19). Tempered with rice husk, these bricks were highly distinctive as they measured 49 by 36 by centimetres. They weighed 20 kilograms each and had one face marked by deep

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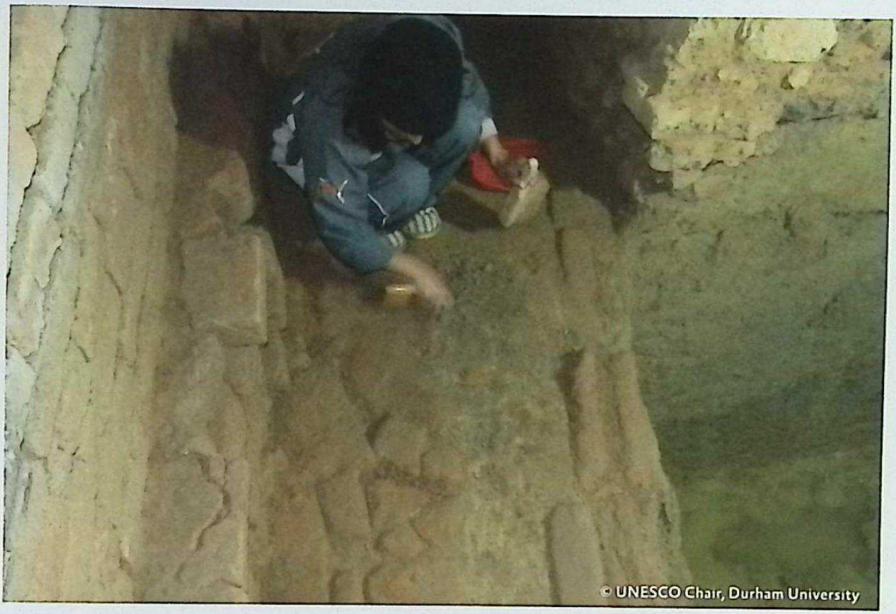

FIGURE 20: The worn paving of the pre-Asokan structure, here defined by the double brick on edge kerb to its right and the deep foundations of the Mauryan building to its left, is cleaned for photography.

finger grooves. The area to the immediate south of the kerb was paved with the same bricks, although many of them were broken in antiquity and this area was repaved with a new layer of bricks (FIGURE 20). Surviving parts of this simple brick platform have been identified in other areas of the temple, suggesting that it originally covered an area measuring 26 metres north to south and 21 metres east to west. Soil micromorphology indicates that the central area of the temple, now defined by the kerb, continued to be void of brick structures. There is evidence of repair (FIGURE 21) in some parts of the temple with three superimposed layers of paving and also another area of rammed mud floor which included large fragments of brick. At the end of its lifespan, the early brick platform temple was enshrined within the brick Asokan Temple and sealed below the new construction (FIGURE 22). There is also evidence from the Sacred Garden that the area between the Village Mound and the Mayadevi Temple was occupied during this period, as excavations below a Mauryan Period *vihara* structure, have yielded evidence of timber structures (FIGURE 23).

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FIGURE 21: The worn paving of the pre-Asokan structure, here defined by the double brick on edge kerb to its right and the deep foundations of the Mauryan building to its left.

FIGURE 22: Photograph of an extremely well preserved portion of the Pre-Asokan brick pavement within the Mayadevi Temple partly obscured by Mauryan Period foundations walls.

Period III: Mauryan Lumbini (third to second century BCE)

While many researchers suggest that the Mauryan, or rather Asokan, Period marks the most significant phase in its development, Lumbini was already a place of early pilgrimage, as demonstrated above. However, the visit of Asoka in 249 BCE is associated with the clear elaboration of the site with the erection of the sandstone pillar, the construction of a new brick and tiled shrine at the Mayadevi Temple and the building of numerous *stupas* and a *vihara*.

The Asokan Pillar

Perhaps the most famous monument in Lumbini, the Asokan Pillar, provides clear evidence of the Mauryan presence at the site. The pillar is made of polished Chunar sandstone, weighs 37 tons and originally stood at a height of 30 feet and 10.5 inches,

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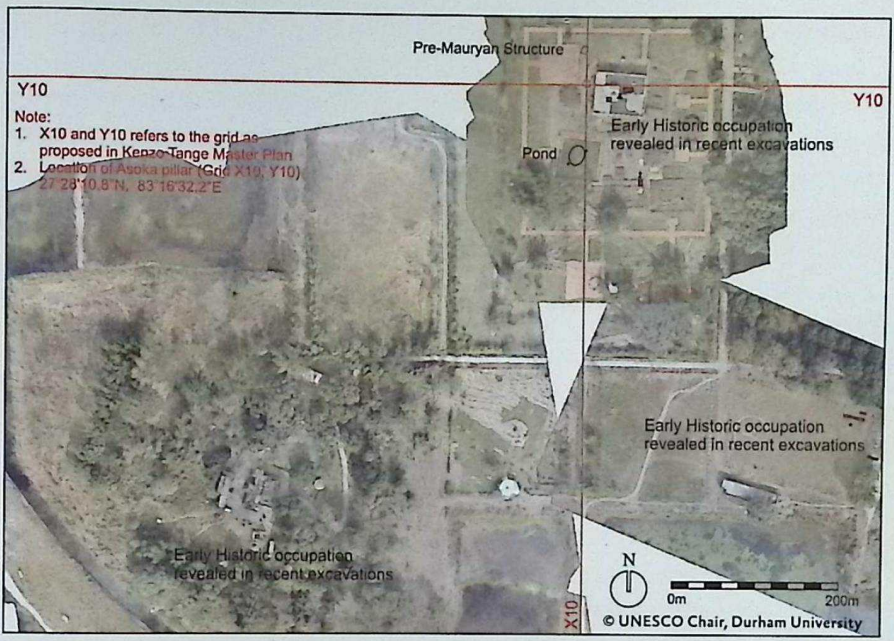
Pre-Mauryan Structure
Y10
Y10
Note:
1. X10 and Y10 refers to the grid as proposed in Kenzo Tange Master Plan
2. Location of Asoka pillar (Grid X10, Y10) 27°28'10.8"N, 83°16'32.2"E
Pond
Early Historic occupation revealed in recent excavations
Early Historic occupation revealed in recent excavations
Early Historic occupation revealed in recent excavations
N
0m
200m
X10
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Figure 23: **Early Historic**
Remains of structures and monuments within the Sacred Garden of Lumbini

of which 13 feet and 8.5 inches was buried underground. The pillar is a truncated cone, which tapers from 2 feet and 7.25 inches at the base to 2 feet and 2.5 inches at the top. Mishra reported that the bottom of the pillar was inserted into the centre of the base slab, with a brick foundation underneath.[39] The pillar visibly tilts and has suffered some damage with a vertical fissure running down the middle. The top of the pillar is broken and there is no trace of the horse capital as described by Chinese traveller Xuanzang but part of the base of the capital survives.[40] The Asokan inscription on the pillar is in Brahmi script and has been translated as: "By King Piyadasi, the beloved of the gods [who] having been consecrated twenty years [having] come himself personally [here] to offer homage, or celebrate, because Sakyamuni Buddha was born here, was caused both a Silavigadabhica to be built and a stone pillar to be set up. [And], because the Lord was born here, the Lumbini village was made free from taxes and liable to pay [only] one-eighth part [of the produce]".

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The brick and tile Mauryan Mayadevi Temple

According to the Japanese Buddhist Federation (JBF) excavators, the Asokan temple appears to have been constructed in at least two phases, referred to as the lower and upper structures, and hereafter as Phase 1 and Phase 2. The construction was dated by the excavators with respect to brick design, a single radiocarbon date and Northern Black Polished Ware, grey coloured pottery and two coins.[41]

Phase 1

The earliest phase of the Mauryan brick temple consisted of a double-walled structure with an external pavement. Its inner floor rested on an earlier clay mound although it was supported on a cardinal grid of 1.5 metre deep foundation walls. Cutting through the earlier deposits below, the upper parts of the nine square and rectangular units formed within the foundation grid were filled and packed with construction debris to form a flat surface. When the JBF excavators investigated the area, they mistook these foundations units for underground rooms, which they called 'chambers'. During the removal of the upper rubble fill of 'Chamber Two', they exposed a conglomerate stone of the Siwalik variety which had been bonded into a level of bricks. The archaeologists interpreted the stone as marking the actual birthplace of Lord Buddha.[42] Both the inner and outer walls surrounding the temple have foundation cuttings, with crushed bricks at the base to create the soild footing for construction. A single course of bricks was laid in a herringbone pattern to create the pavement was found on the north and west sides of the temple and a similar pattern of brick-laying created a floor between the double walls and the temple's interior.

Phase 2

Shortly after the construction of Phase 1, there appears to have been a period of reconstruction. This phase more or less followed the same ground plan and used almost identical bricks. It is not known why this rebuilding took place but the Japanese excavators suggested that it was due to instability in the structural design or to counter the regular seasonal flooding of the area by lifting the height of the Temple's floor. A further six foundation units were defined, three to the east and three to the west of the original nine as the foundations for the temple's floor plan expanded, bringing the total number to fifteen interior units formed by the

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supporting walls. The floor of the temple itself was then also raised by several courses of bricks and the unit interiors filled accordingly. Unit Two was filled up with brick, burying the Marker Stone, whereas the remaining units were filled with soil.[43] The surviving brick walls of Phase 2 are some twelve or thirteen courses above those of Phase 1 and are narrower than the earlier structures, so that the lower part of the walls project out in plan between 20 and 30 centimetres. A series of buttress walls were built between the outer and inner walls at this time, to shore up and stabilise the structure of the inner wall. These buttresses were, in most cases, separated from the brick floor between the double walls by a layer of earth, presumed to be a natural build up within the space, rather than an intended foundation.

During the course of the Japanese-Funds-in-Trust investigations, a number of the old sections left by the Japanese Buddhist Federation team were cleaned back and recorded. This resulted in the generation of additional information regarding the morphology and phasing of the Asokan period Temple. For example, we now know that the second phase of Asokan brickwork was associated with the presence of broken ceramic roof tiles in the outermost west, south-west and south-east portions of the temple. The absence of any tile fragments in the central areas in particular, suggests that only the outer edges of the temple were roofed and that the central portion was open to the elements. As presented above, this hypothesis has been supported by the examination of soil micromorphology, which has yielded evidence of tree roots in antiquity. In addition, evidence of wall plaster has been recorded from most parts of the second phase of the Asokan Temple, some of which appears to have been painted (FIGURE 24). As such, it has been identified that the shrine's walls were painted black, white, yellow and red.

The Sacred Garden

As noted above, archaeologists believe that one of the first brick built *viharas* (V-2) in the Monastic Zone was built at this time (FIGURE 25). It was excavated by Mishra in the 1980s and is located south of the Mayadevi Temple, with individual residential cells on all four sides and a meeting hall in the centre.[44] Unfortunately, there was no mention in the report of how the structure was dated, except attributing interpretation to the so-called 'Mauryan Horizon'. There are also no plans or photographs of the excavations, and there is the possibility, that earlier monuments of non-durable materials may be located in the vicinity of these edifices, as identified

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FIGURE 24: Reconstruction of the Mauryan Period Mayadevi Temple at Lumbini, with adjacent Asokan pillar.

by the Japanese-Funds-in-Trust-for-UNESCO project at the Mayadevi temple and at V-2. During his earlier excavations in the 1970s, Rijal described how two *stupas* to the north of the Mayadevi Temple (S-3 and S4) also dated to the Mauryan period but again no justification for this dating process was provided in his report. Rijal also identified another Mauryan *stupa* with a square foundation five feet north of the Temple (S-6), which had been cut down by three feet, most likely during the excavations carried out by Keshar Shamsher Rana in the 1930s. The base of the *stupa* contained the lid of a cylindrical gold casket in association with some charred human bones and other ritual offerings, most likely also disturbed in the 1930s.[45] Mishra, in his 1996 report, also mentioned a further two plain rectangular *stupas* belonging to the Mauryan period, one 35 feet north of the Mayadevi Temple and the other inside a big square *stupa*. It is unclear, which structure he was referring to as 35 feet north of the temple, as none of the plans at the time depicted a *stupa* at this location, but the large square *stupa* might be located south of the Mayadevi Temple and is possibly identified in Bidari's plan (S-30).

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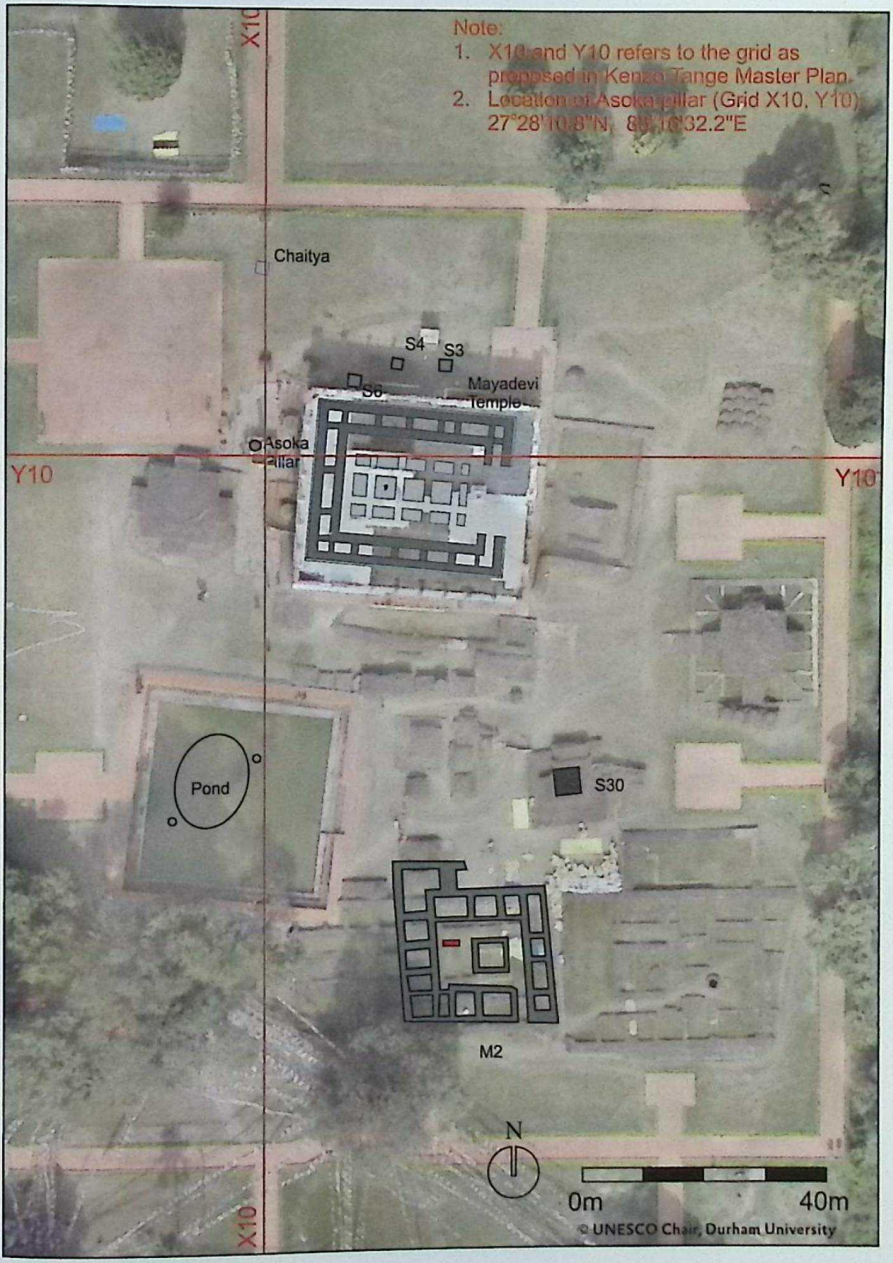

FIGURE 25: **Mauryan period**
Remains of structures and monuments within the Sacred Garden of Lumbini

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Period IV: Sunga Lumbini (Second to first century BCE)

The Sacred Garden

There is some evidence of a Sunga period of construction at the site, although it has not been as readily identified as some of the other phases of development (FIGURE 26). Monuments attributed by scholars to this period include a *vihara* (V-3) to the west of the Mauryan *vihara* (V-2), the expansion of the big square Mauryan *stupa* mentioned by Mishra (S-30) and a new period of construction at the Mayadevi Temple. The *vihara* was described by Mishra in his report on the excavations of 1984 and 1985, in which he mentions that the only Sunga phase of the structure that could be found was the outer walls, as the rest of it was badly damaged by later periods of construction.[46] The Sunga phase of construction on the big square Mauryan *stupa*, also identified by Mishra, includes the building of a thick wall around the original *stupa* and a second wall built five feet from it to create a processional path.[47]

The Mayadevi Temple

The Japanese Buddhist Federation excavators noted two distinct periods of construction within the Mayadevi Temple following the Mauryan period, but did not provide any dating evidence for Phase 2 and, given the nature of the construction carried out, it seems more likely that these were two phases of the same period. However, no material was recovered from the remains that would assist in dating the relevant activities, thus assignment to the Sunga period is not conclusive.

Phase 1

The Japanese excavators have suggested that an exploratory pit was dug into the brick fill of Unit Two in the Temple during this phase in order to confirm the position of the Marker Stone buried during the construction of the Phase 2 of the Mauryan shrine. This new pit was then brick-lined and refilled with earth and broken bricks, and the top was sealed with four large pieces of sandstone, creating a new marker and focus for the temple.[48]

Phase 2

A large brick structure was then erected over the Marker Stone, possibly in the form of a *stupa*. This structure was square, measuring approximately seven metres

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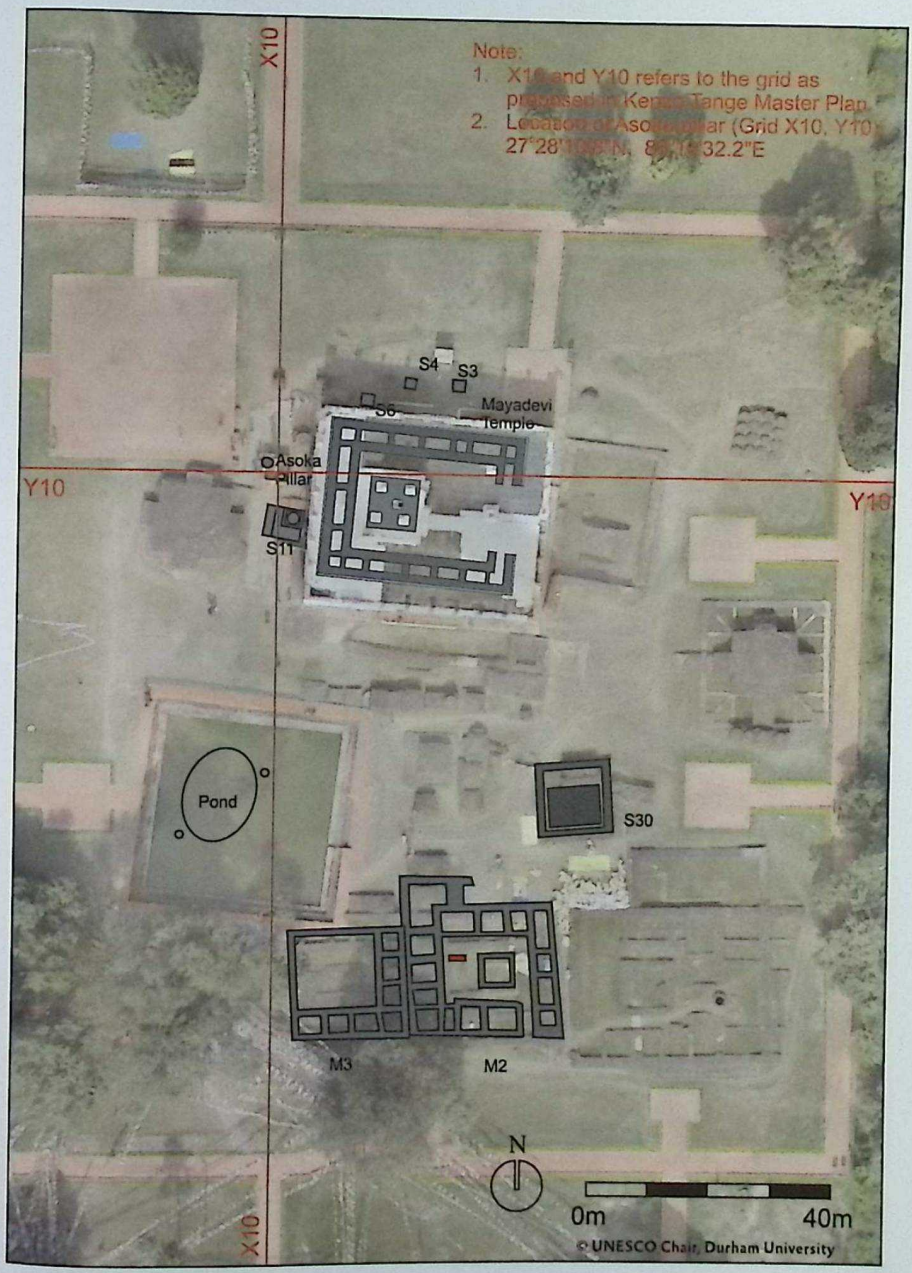

FIGURE 26: **Sunga period**
Remains of structures and monuments within the Sacred Garden of Lumbini

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wide on each face and stood about two metres high. Built into this structure were five chambers; four positioned inside the corners and one central chamber aligned over the sandstone marker. The construction was then capped but it is not known whether this cap was a plain flat platform or decorated with further structures.[49]

Period V: Kushan Lumbini (first to second century CE)

The Sacred Garden

The available data for the Kushan period construction at Lumbini is considerably clearer than the Sunga and, during this period, several *stupas* and both existing *viharas* were rebuilt and enlarged (FIGURE 27). A new *vihara* (V-1) was constructed to the east of the existing *viharas* and appears to have been rectangular in shape contrasting with the existing square structures. Mishra describes the structure as having living rooms for the monks on the north, south and east sides and a meeting hall on the north side. Again, Mishra did not provide evidence for the dating, or any plans or photographs. He did, however, mention that there are two brick *stupas*, one square and the other circular, and a well, built of wedge-shaped bricks in the courtyard of the *vihara*. Mishra also mentions the reconstruction of the existing Mauryan *vihara* (V-2), which now had 14 living rooms on the west, north and south sides, and a veranda on the western side facing the courtyard to the east. Mishra identified further construction work during the Kushan phase of the Sunga *vihara*, including a long drain starting from a room on the east and running through the central area, before turning southwards for disposal outside the walls, making a rough 'L' shape in plan. He also mentioned that there were two small water storage tanks in the south-east room of the structure and that the rooms may have been used as a kitchen. One Kushan copper coin was also found in one of the south rooms. With only sketch plans to accompany this phasing, it is difficult to identify exactly which parts of the structures Mishra is referring to, but it is possible to trace a rectangular structure that is built over both the Sunga and Mauryan *viharas* (V-2 and V-3) which may represent this phase.[50] Several *stupas* to the north of the Mayadevi Temple were enlarged during this period with the encasing of earlier rectangular structures within new circular domed *stupas*.[51]

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FIGURE 27: **Kushan period**
Remains of structures and monuments within the Sacred Garden of Lumbini

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The Nursery Well

The Nursery Well takes its name from its location within the modern plant nursery managed by the Lumbini Development Trust. It was first investigated by B.K. Rijal and later by the Japanese-Funds-in-Trust-for-UNESCO project. Located to the south-west of the Village Mound, this unique well was constructed using specially manufactured bricks and survives to a depth of 29 courses. The individual bricks were initially cut as wedges from thick rings of clay. Each brick from the ring was then stamped or incised on their inner and upper faces to denote their original position within the ring. The marks on the inner face of each brick indicated to which ring each individual brick belonged, while the markings on the upper surface indicated where each brick belonged within each ring. The bricks were then placed in a kiln and fired before being transported.

The marks stamped or incised on each brick used symbols such as elephants, trees, chakras, snakes, peacocks and tridents. As each brick was cut into a wedge, or 'key stone' shape, the well had the strength to survive burial and subsequent re-excavation. This design suggests that the fired bricks could then be transported anywhere and re-constructed according to the markings. This unique manufacturing technique suggests that such wells were mass-produced, posibility on an imperial scale during Kushan rule between the first century BC and the third century CE.

The Mayadevi Temple

This period also saw a further redevelopment of the Mayadevi Temple in three phases of construction in a single stylistic period belonging to Period V.

Phase 1
This phase saw the commencement of a major construction work as a large brick and earth platform was created to surround the square brick structure of Phase 2 of the Sunga Period. The retaining wall of this platform had not survived fully but the upper surface of this platform was more or less level with the top of the Period II and cut by a series of drains.

Phase 2
A new retaining wall of fine clay bricks was built around the platform, which cut

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off and sealed the ends of the Phase 1 drainage trenches. A hardened surface of earth and traces of plaster sealed the fill of the platform and well packed rows of bricks lining the edges of the platform may have served as a pavement or floor surface. A new entrance stair, decorated with plaster, was built in the middle of the eastern wall and led up to this brick surface.

Phase 3

A new, smaller platform was then built onto this floor level and a small square structure was created on top of it, directly over the Marker Stone of the Mauryan Period. The base platform of this phase measured 3.1 by 4 metres and was paved with brick and *surkhi*, a type of mortar made from brick dust. The small square structure above was also constructed in brick and measured around 1.5 by 1.3 metres wide, and around 45 cm high.

Period VI: Gupta Lumbini (third to ninth century CE)

The Sacred Garden

The Gupta period of construction at the site is quite distinct as new architectural styles were employed in the building of *stupas, viharas*, temples and the Mayadevi Temple (FIGURE 28). Mishra describes the *stupas* built during the Gupta period as having two shapes – square *stupas* with niche projections on all four sides and steeped rectangular *stupas* with a flat top. Some of the square structures had a line of tapered and projected bricks separating the lower area with the dome and in one *stupa* there were a pair of flowers incised on all four corners. Mishra also mentioned that 19 terracotta seals with Gupta characters were found at a square Gupta-period *stupa*, however, he did not give any indication as to which structure he was referring. The only specific *stupa* that Mishra referred to as having a Gupta construction phase is that of the large square Mauryan *stupa* (S-30) that was previously renovated in the Sunga period. The Gupta period added walls on all four sides in the square basement.

Based on Mishra's description of Gupta period *stupas* at the site, it is possible to identify several other structures that may have been built or enlarged during this period including a Kushan period structure (V-1) which had its orientation completely changed from a north-south to an east-west alignment. In addition,

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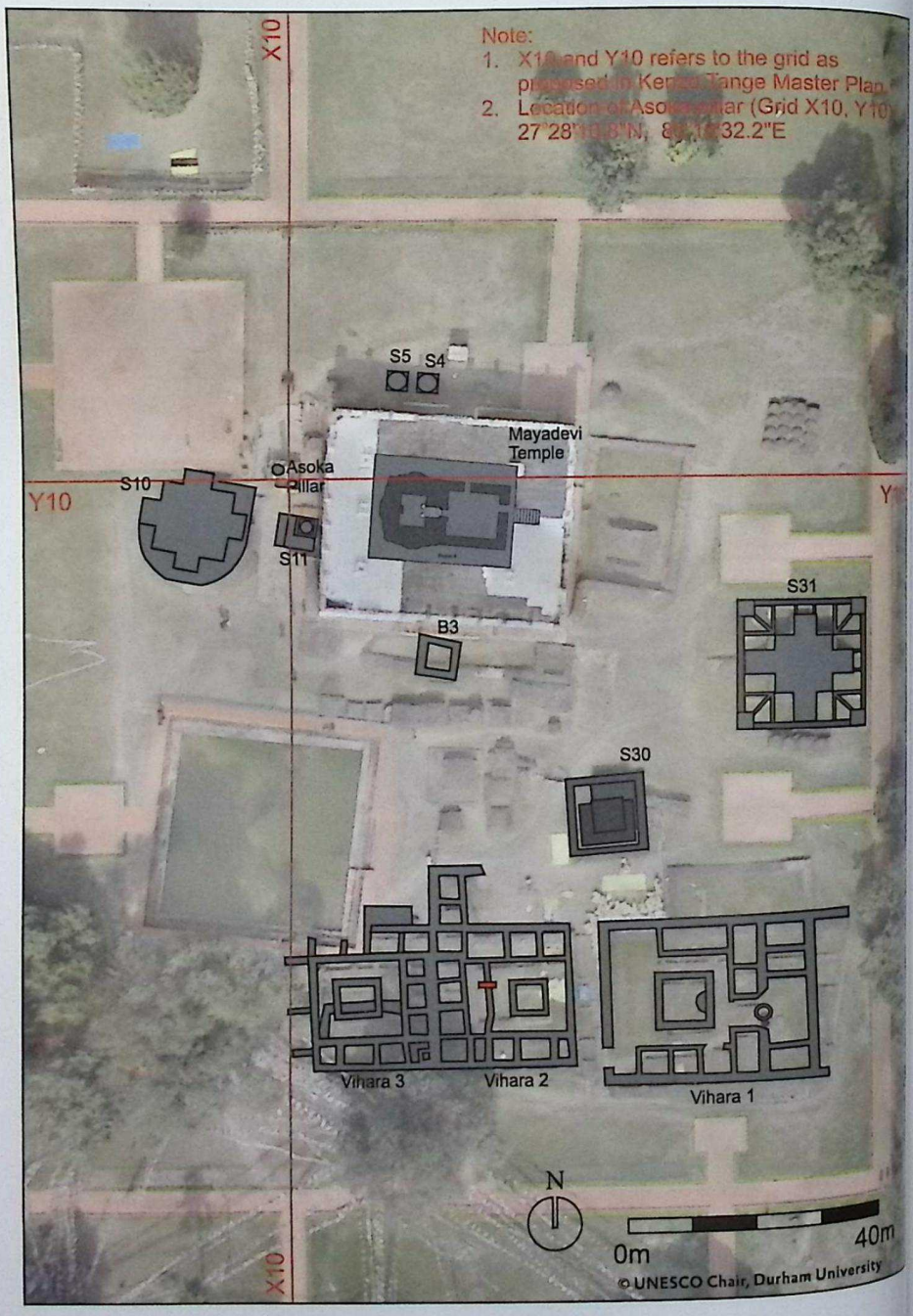

FIGURE 28: **Gupta period**
Remains of structures and monuments within the Sacred Garden of Lumbini

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Mishra mentioned that the *vihara* on the far west (V-3) was also rebuilt during the Gupta period to provide a total of eleven rooms on the east, north and south sides of the building with an *aposthagarasala*, or meeting hall, in the centre. Mishra noted, only briefly, of his discovery of the basements of two Gupta temples (B-3) on the south side of the Mayadevi Temple, but he did not provide further details concerning them.

The Mayadevi Temple

The sixth period of construction at the Mayadevi Temple, which is also thought to have occurred at this time, was characterised by the introduction of an entirely new style and plan of temple, on top of the platform already created by the remains of earlier structures below.[52]

Phase 1

The first phase of this period saw the construction of a new surface around the square structure built during Phase 3 of the Kushan Period. The new surface brought the surface level of the entire upper platform to the same height as the square structure in its centre.

Phase 2

A small temple was then constructed on top of this platform in highly decorated carved bricks. The building was described by Purna Chandra Mukherji as a seven-bay *saptaratha* on the basis of its external shape. The plan provided two cells, referred to as a chancel and an ante-chamber. The floor of the chancel was directly above the base platform of the square structure built during Phase 3 of the Kushan Period and followed the same measurements and plan layout. The excavators have thus argued that a key vertical line was, therefore, maintained throughout all of the construction phases of the temple, between the Marker Stone of the Mauryan Period, and through a series of brick structures, which must indicate a votive and sacred meaning. The well-known nativity image of the birth of Lord Buddha was also mounted in the chancel, set into the floor just away from the west wall. The 2.05 metre high sandstone Nativity Image is one of only three stone objects at the site, along with the 'Marker Stone' and the Asoka Pillar. It depicts the standing infant Buddha and Queen Maya Devi holding a branch with Brahma, Indra and Gautami Prajapti in attendance. When the site was rediscovered, the carving was found to

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have been broken into two and Maya Devi was still worshipped as Rummandei, a local deity who offered protection from smallpox. A flight of six steps led up east out of the chancel to the antechamber and two exits from this room led north and east to the platform and staircase that leads back to the ground level.

Whether the level of the antechamber was deliberately raised above the level of the chancel floor to further delimit the sacred space, or whether this was a development of further phases of construction, was not identified in the reports. One defining element of Gupta influence is the use of hand-carved bricks. They are found here within the Temple and have now been identified on a monumental structure under the modern Samai Mai Temple in Tilaurakot-Kapilavastu and at Chatradei. The best example of Gupta period architecture and bricks in the region can be seen at Kudan

Period VII: Medieval Lumbini (ninth to fourteenth century CE)

Very little has been written about this period in Lumbini as previous excavations at the village site have only revealed occupation layers dating up to the Gupta period. There is evidence indicating that Lumbini remained a site of pilgrimage well into the medieval period as suggested by the presence of an inscription on the Asokan Pillar and a number of *stupas* built on top of existing structures (FIGURE 29).

The Sacred Garden

The inscription on the pillar is above the original Asokan Pillar inscription and marks the visit of Ripu Malla in the fourteenth century. Ripu Malla was a Prince of the Nagaraja dynasty of western Nepal, who visited the site in 1312 CE The inscription consists of a few phrases of a Mahayana Buddhist prayer and the words "Prince Ripu Malla be victorious". The inscription has been used as evidence to support the theory that Lumbini and Kapilavastu were widely known to be the birthplace and homeland of Lord Buddha during the medieval period.[53]

It was also during this period that a number of votive *stupas* were erected across the site and Bidari claims that the sixteen votive *stupas* east of the Mayadevi Temple (S-16), first mentioned by Mitra in 1962, were constructed sometime between the visits of the Chinese travellers in the seventh century CE and Ripu Malla's visit

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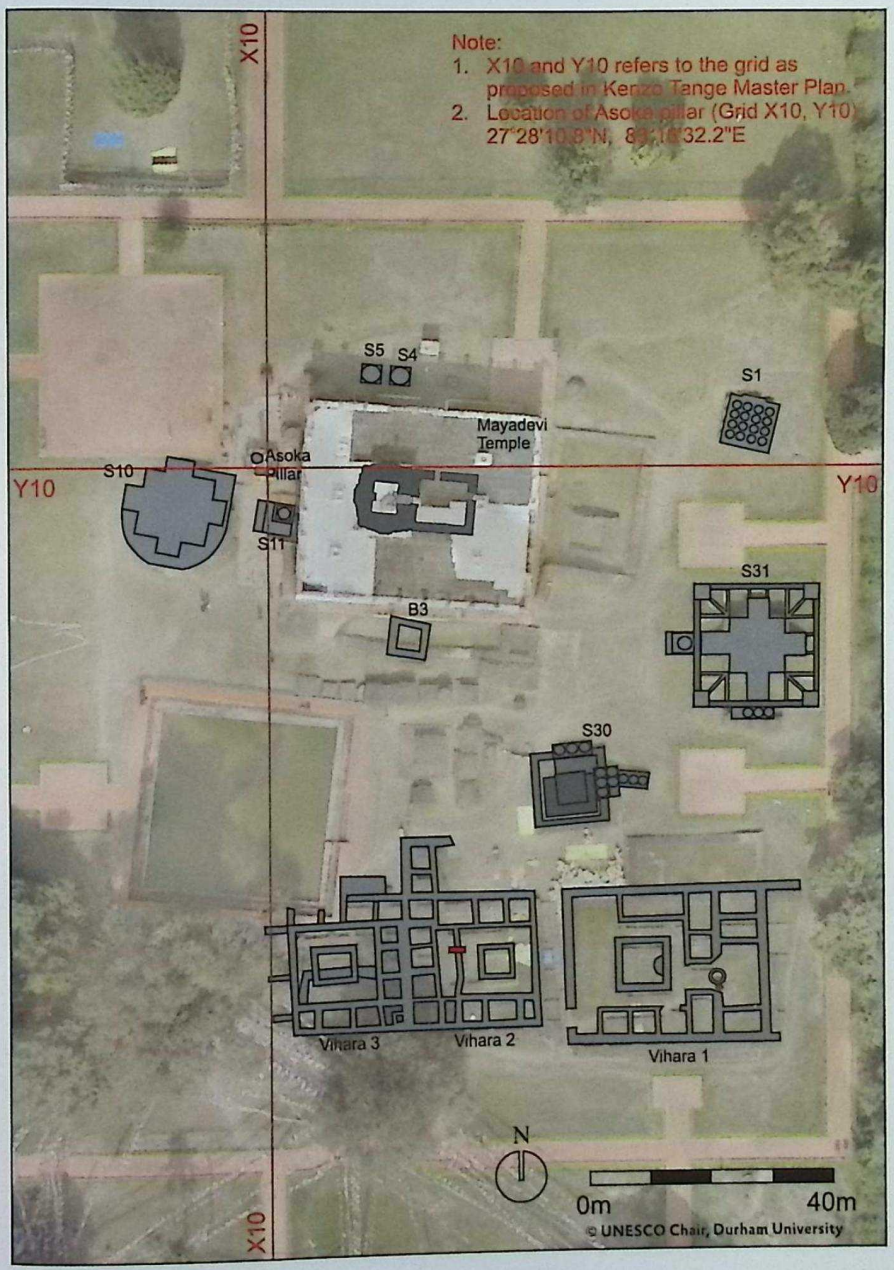

FIGURE 29: **Medieval period**
Remains of structures and monuments within the Sacred Garden of Lumbini

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the fourteenth century CE.[54] Mishra also describes a series of small votive *stupas* that were erected during this period on top of the big square *stupa* (S-30), of which only nine still survive.[55]

Period VIII: Early Modern Lumbini (fifteenth to nineteenth century)

There is very little evidence of construction or occupation at Lumbini between the fifteenth century CE and the nineteenth century CE and it is likely that its monuments were gradually covered by vegetation as knowledge of the site's location fell into obscurity, with veneration continued through local deities.

Period IX: Modern Lumbini (nineteenth to twentieth century CE)

When Dr Anton Führer and General Khadga Shamsher J.B. Rana rediscovered Lumbini in 1896, they found "a small modern mean-looking building, which was about four years ago erected by a Saiva ascetic on top of one of the ruined *stupas*" (1972). Presumably, the ruined structures he refers to were the remains of the uppermost eroded remains of one of the final phases of the ancient Mayadevi Temple. As noted above, the nativity image was at that time thought to represent a local deity, Rupadevi, and was worshipped as such. A house for the priest had also been constructed just north of this temple on the grassy mound that now buried the earlier platform and temple stages.

The final period of construction and deposition in Lumbini occurred in the modern period, between the rediscovery of the site in 1896 and the present day. Indeed, the site has experienced significant changes over the past century as each excavation has changed the landscape in numerous ways (FIGURE 30). As discussed previously, this final period may be divided into five distinct Stages: Stage 1: Rediscovery; Stage 2: Reconstruction and Remodelling; Stage 3: Conservation; Stage 4: Re-excavation; and Stage 5: Strengthening the Conservation and Management of Lumbini, the Birthplace of Lord Buddha, World Heritage Property.

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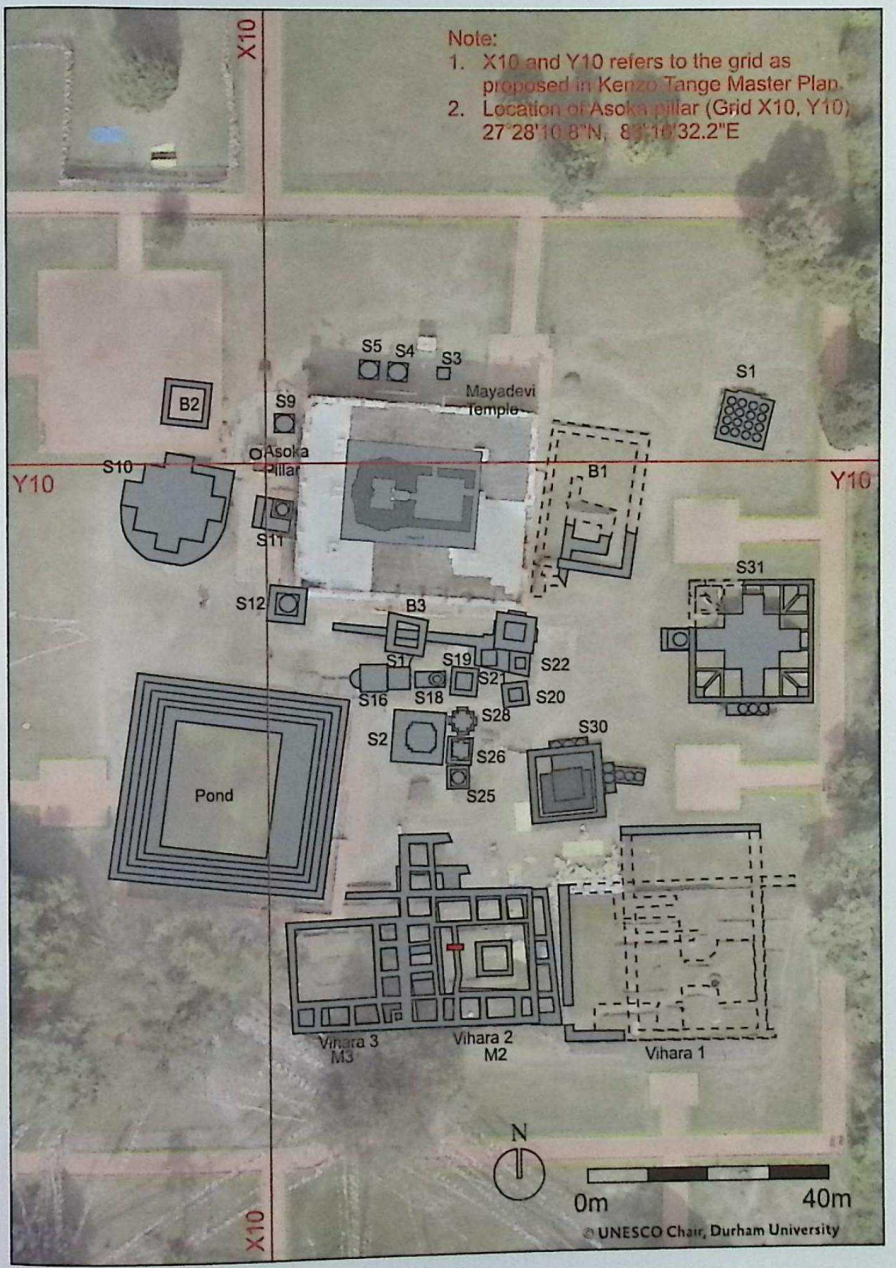

FIGURE 30: **Archaeological revelations until 1969**
Remains of structures and monuments revealed within the Sacred Garden of Lumbini by 1969

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FIGURE 31: View of the excavations in the centre of the Mauryan Period Mayadevi Temple

CONCLUSION

The new sequence from the Mayadevi Temple site has thus provided three major discoveries:

(1) The first scientific and archaeological evidence to contribute to the debate surrounding the dates of the Buddha's life

While texts and traditions provide a detailed narrative of the Buddha's teachings and life, possible dates for his *mahaparinivarna* at the age of eighty vary, including a Nepali and Sri Lankan tradition of 623 BCE, a long 'southern Buddhist' chronology of 544/3 BCE and short chronologies between 390 and 340 BCE. Radiocarbon dates from the fills of the posthole alignments and Optically Stimulated Luminescence dates from the surrounding soils indicate that the sacred space was first delineated within the Mayadevi Temple in the sixth century BCE (FIGURE 31). These dates

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push the evidence for ritual activity at Lumbini far before Asoka and indicate that the longer chronology is correct. However, further investigations are required at Sarnath, Kushinagar and Bodh Gaya to confirm such assertions.

(2) The identification of a tree shrine

Known as *bodhi-griha*, these shrines are a common feature of modern Buddhist sites but have often evaded detection within the archaeological record. The recent excavations at Lumbini go some way to addressing the lack of scientific evidence for this type of shrine, which are frequently represented on Early Historic Buddhist sculpture and coinage (FIGURE 32).

(3) The identification of pre-Asokan monumental Buddhist architecture

Since the nineteenth century, archaeological enquiry in South Asia has often been limited to exposing monuments of stone and brick, reinforcing what has been termed the 'Mauryan' or 'Asokan Horizon'. Referring to the spread of durable monuments throughout South Asia ascribed to the Emperor Asoka, this horizon was self-perpetuating as archaeological methodologies were targeted towards exposing durable standing remains. Therefore, when brick was reached, most archaeologists felt that there was no need to penetrate deeper. Such an approach was adopted by the Japanese Buddhist Federation and thus they assumed that Asoka's temple was the earliest construction at the site. The recent archaeological discoveries at Lumbini suggests that there was an strong earlier tradition of wooden architecture at Buddhist sites and also illustrate the potential for uncovering such features elsewhere, if suitable excavation methodologies are employed.

The evidence from Lumbini now indicates that there was an earlier, gradual development of ritual architecture at Buddhist sites, rather than sudden bursts of patronage, and rapid episodes of construction, like those ascribed to Asoka. Penetrating through the 'Asokan Horizon', Lumbini offers a microcosm for the development of Buddhism from a localized cult to a world tradition. Transformed from a simple wooden railing around a tree to a series of brick pavements with a kerb around this same focus, this footprint was later utilised as foundations for the Asokan brick-built temple (FIGURE 33). This evidence supports the concept of a continual development and embellishment of existing structures at the site and

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FIGURE 32:
Reconstruction of the earliest shrine at Lumbini, constructed in the sixth century BCE.

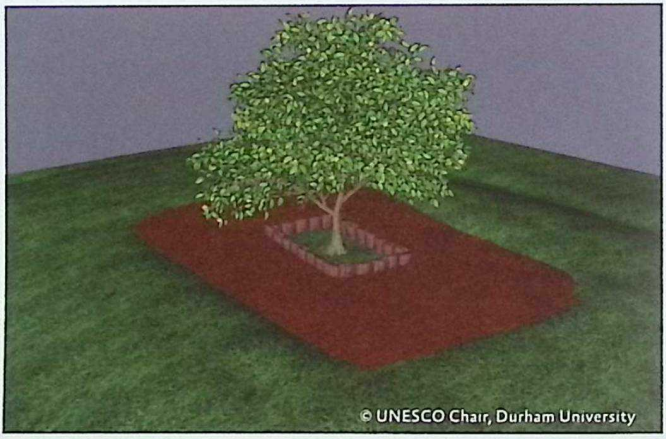

FIGURE 33:
Reconstruction of the first brick built monument at Lumbini, which consisted of a brick pavement surrounding a central space formed by a kerb.

hints at the possibility of the earlier spread of shared cultural features which were later incorporated within the imperial style of the Mauryans.

It must also be noted that the Mayadevi Temple was not an isolated monument as demonstrated by the additional research conducted within the Sacred Garden and outside the designated UNESCO World Heritage Site during the recent programme of archaeological investigations (FIGURE 34). Indeed, we have also characterised the development of the village of Lumminigame mentioned in Asoka's inscription. This settlement would have serviced the Temple complex, its surrounding monastic communities, pilgrims and local residents. As Optically Stimulated Luminescence dating shows that this site was established as early as 1300 BCE, well before the life of

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FIGURE 34: Aerial photograph of the Mayadevi Temple, pond and Sacred Garden (2013)

the Buddha, the village's sequence confirms the presence of long established human settlement in the region prior to its focus of religious significance. The presence of an intricately constructed Kushan period well, close to the village, demonstrates that the patronage of infrastructure to benefit pilgrims and residents alike was also a continued practice. With a massive increase in international pilgrimage and greater needs from local communities, recent archaeological investigations have not only uncovered new information about Lumbini's past and development, but have also aided site protection through Archaeological Risk Mapping. This has enabled the sustainable development of amenities for visitors and pilgrims at the site whilst preserving Lumbini's heritage of Outstanding Universal Values for future generations.

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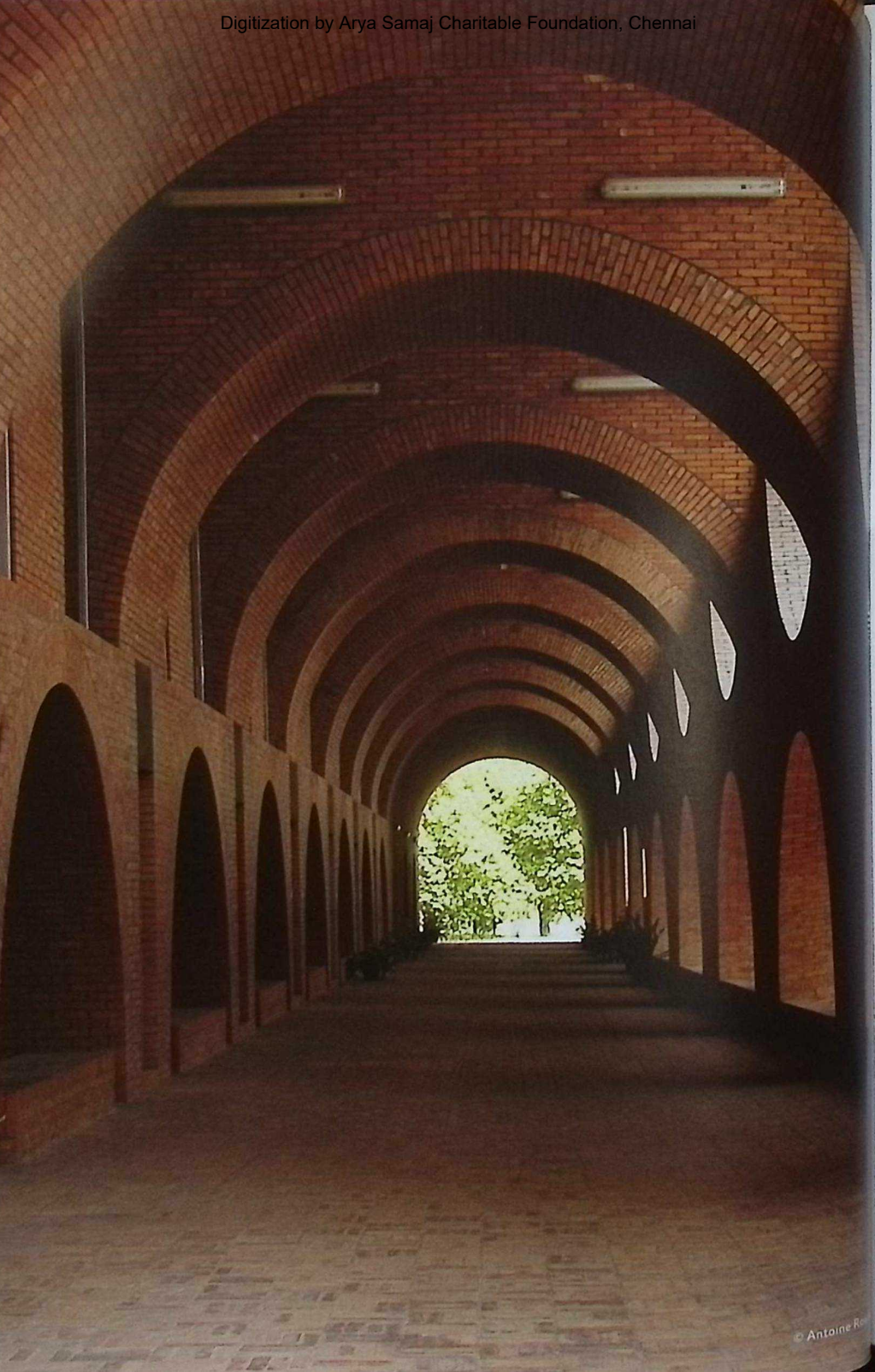

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CHAPTER FOUR

The Kenzo Tange Master Plan

Yukio Nishimura, Takefumi Kurose and Ruprama Rai

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Visit by U Thant, UN Secretary General (April 1967)

"One of the most important days of my life was April 14, 1967, when His Majesty King Mahendra of Nepal sent me to Lumbini, the birthplace of Lord Buddha, in his helicopter.
Quote from U Thant's memoirs

In 1967 U Thant, Secretary-General of the United Nations from 1961 to 1971, visited Lumbini and initiated a campaign to develop the site. This culminated in a master plan that was prepared by Kenzo Tange between 1972 and 1978, defining a five by five mile area with the Sacred Garden in the centre. The plan presented a concept for the Sacred Garden, with a water body and levee defining an inner garden and the main archaeological site around the Asoka Pillar, and an outer area left as a natural forest.

U Thant's pilgrimage to Lumbini in April 1967 became a landmark in the site's development. U Thant believed that Lumbini should be a place where religious and secular leaders could come together to create a world free from hunger and strife. Deeply impressed by Lumbini's sanctity, he discussed with the Government of Nepal how best to develop it into an international pilgrimage and tourism centre.

Following U Thant's visit, a mission was carried out between April and May 1968 by John Pollaco for UNESCO and a report was prepared the following year. A further mission was carried out in April 1969 by the Resident Representative of the UN in Kathmandu, Yacoub Joury.

Allchin-Matsushita report (1969)

The UNDP chose Frank Raymond Allchin, a lecturer on Indian Studies at Cambridge University, England, and Kazuyuki Matsushita, an architect and planner with the firm Tange and URTEC (The Urbanists and Architects Team), Tokyo, to begin work on the Lumbini Development Project. Between 13-25 December 1969, they visited Nepal and made the arduous journey to Lumbini. Although Kenzo Tange did not participate in the mission, he was consulted on the project during this early stage. Allchin-Matsushita proposed a site of three square miles for the development of a Sacred Garden and a Pilgrim Village, as well as a Buffer-Zone. They further

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Aerial view of the Sacred Garden in 1969

explored options for an access road to Lumbini with particular emphasis on the Bhairahawa-Lumbini stretch connecting Lumbini to the regional airport.

The Allchin-Matsushita Report provided the basis for all further work that went into the Master Plan for Lumbini and provided data relating to climatic conditions, health, population, arboriculture, agriculture, water supply, electric supply and construction materials.

The consultants suggested that a lead architect or planner should be chosen not through a design competition but by selecting a "principal architect of high reputation". The report also provided important details on implementation modalities, organisation, maintenance, and opportunities for tourism development.

It also outlined the scope and context of the project and included a recommendation for the excavation of the Sacred Garden area before construction and landscaping could begin, and mentioned that large areas around the Sacred Garden are liable to water logging and inundation during the monsoon season. Finally, it proposed to build a monastic area adjoining the Sacred Garden and a Pilgrim Village at the northern side of the protected area.

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The physical landscape of Lumbini was described as a flat, featureless region about two miles from the first foothills of the Himalayas, with the view of the hills and mountains often obscured by the weather. The sal forests had receded northwards with the surrounding countryside, which comprised mainly of farmland. The villages in the area were made up of mud houses with thatched roofs and cow dung plastered floors and these seemed to have changed little over the past 2,500 years.

The report laid down the basic concept for the Master Plan and defined five main components:

> "The project for the development of Lumbini offers a remarkable subject and an extremely difficult challenge for the architect and landscape architect. It would seem essential that any work should serve to express the historical and cultural aspect of the site, viewed from the twentieth century, in the light of the universality of the Buddha's message, for the comfort of all people, for the welfare of all people. It should serve to express the early life of the Buddha, and the experiences which paved the way to his Great Renunciation. It should also produce as one of its parts the Pilgrim Village which properly planned will become a centre for local development of all kinds, thus providing a link between the sacred site and the surrounding population."

> "The main elements of the design must be welded together by a strong and clear-cut conception of the project as a whole. Within the project there must be however, a sense of priority and a well-planned phasing so that the later stages can reflect also the needs discovered during the earlier [planning stage]. To provide the necessary land for the project, H.M's Government Department of Housing and Physical Planning create[d] a controlled area of these one by three miles, having the present garden in its southern section". [Allchin and Matsushita, 1969, p. 11]

> "The exact alignment of the access road, where it passes through the controlled area, should be left for determination when the Master Plan is drawn up. The overall functions and layout are conceptually defined. The sacred garden will be situated at the southern extremity of the controlled area and the Pilgrim Village will lie to the north of the proposed road from Bhairahawa. There will thus be a distance of about a mile between them. This area will primarily be

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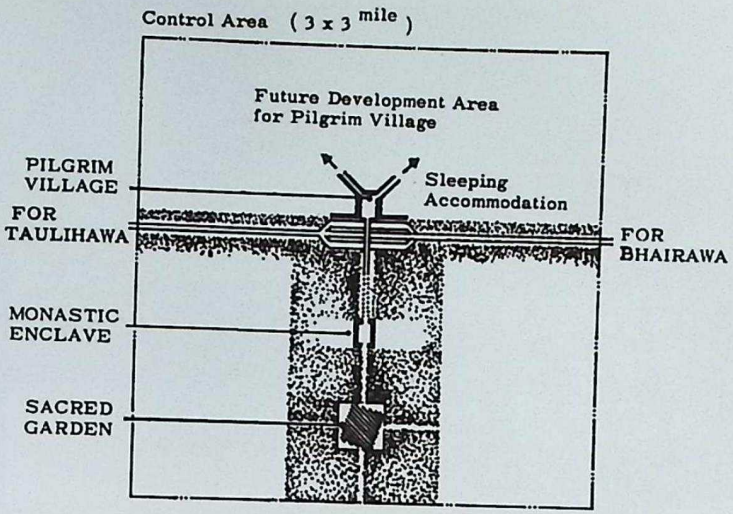

Master plan from Allchin-Matsushita report, 1969
Revised - The site plan has been rotated by 180 degrees and two town names have been swapped to correct an error in the original drawing.

included in the buffer zones. Across it and linking the other two will be the principal access route to the sacred garden. Within this zone, and adjoining the northern side of the garden, we have inserted an area for the construction of shrines and monasteries." [Allchin and Matsushita, 1969, p. 13]

In relation to the buffer zones, the report suggested that they may be retained in part for normal agricultural purposes and in part specially planted with trees to provide shelter and wind protection. The report also mentioned that:

"As the present day villages provide, even now a close mirror of the life of the Buddha's time we would like to see one or more carefully preserved as 'open air museums' for the observation of visitor." [Allchin and Matsushita, 1969, p. 14]

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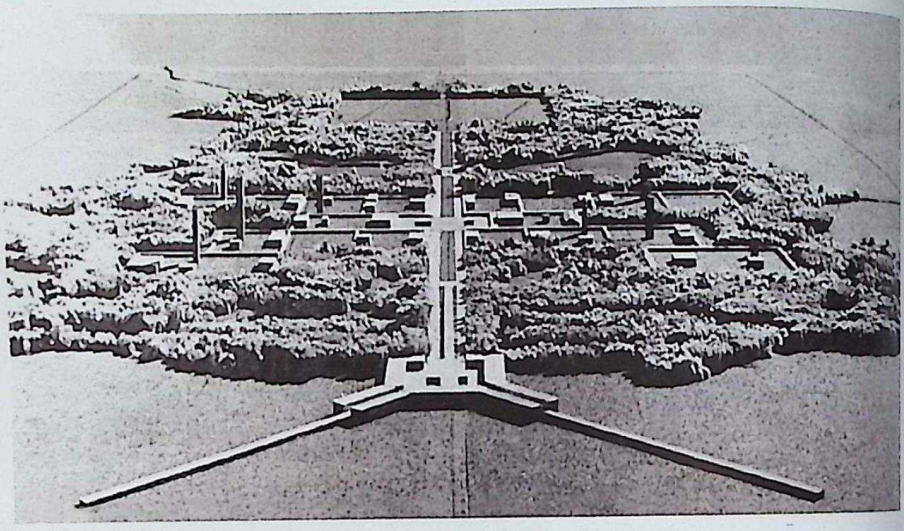

View from the North. Allchin-Matsushita report, 1969
This model shows the area of the planned pilgrims village in the foreground; the rectangular space in the background represents the Sacred Garden. The area is envisioned as densly forested in stark contrast to the agricultural land encountered in 1969.

The Sacred Garden is specifically described:

> "At present an area of some 30-acres around the Asoka Pillar is fenced to form the Lumbini Garden. The whole terrain is flat. Apart from the pillar and the temple of Mayadevi, there are a number of archaeological remains already exposed which will need conservation before they are incorporated into the design. There are also several modern structures including the old rest house, new tourist hotel, post office, school, etc., which should be removed. Before any landscaping begins, the whole area demands archaeological excavation. The size of the new garden may be increased if desired. The essence of the design must be to create an atmosphere of tranquillity, universality, and extreme clarity consistent with the idea of the birth of Buddhism. Whatever landscaping or planting are done, or whatever structures are made, they must serve this end, and therefore, must be of the highest quality of design, reflecting as it were the whole spirit of man, rather than any sectarian or national bias." [Allchin and Matsushita, 1969, p. 12]

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UN brochure "Lumbini. The birthplace of Buddha" (1970)

During the tenth session of the General Assembly of the United Nations in Geneva in 1970, U Thant called upon the international community to come together to help develop Lumbini. In the same year the International Committee for the Development of Lumbini (ICDL) was formed in New York, under the chairmanship of the Permanent Representative of Nepal to the United Nations. The ICDL initially included thirteen member states, namely Afghanistan, Myanmar, Cambodia, India, Indonesia, Japan, Laos, Malaysia, Nepal, Pakistan, Singapore, Sri Lanka and Thailand. Later, Bangladesh, Bhutan and the Republic of Korea were included.

In 1970, the ICDL prepared a brochure entitled "Lumbini. The birthplace of Buddha" for Secretary-General U Thant's appeal to all nations, but especially Buddhist countries, to provide support for the Development of Lumbini. The brochure stated that:

> "Lumbini presents the architect with a formidable challenge. Almost nothing exists today, for even the sal trees have retreated. Everything has to be created there and created in such a way as to reveal the universality of Buddha's message and its significance in the modern world as well as to express the early life of Buddha and the events leading up to the Great Renunciation. The proposals presented here are initial sketches directed towards the achievement of these objectives. They will have to be worked out in considerably more detail within the Master Plan." [United Nations, 1970]

> "The whole design should be animated by a strong and clear-cut concept devoid of any narrow sectarian bias. It should, in fact, express the spirit of the host country of Nepal, whose population embraces both the Hindu and Buddhist faiths, living together in harmony." [United Nations, 1970]

The brochure elaborates the Master Plan's main components that were originally outlined in the Allchin-Matsushita report:

The Green Areas:
Surrounding the whole site would be "green areas" whose function would be to surround both the Sacred Garden and monastic enclave and separate them

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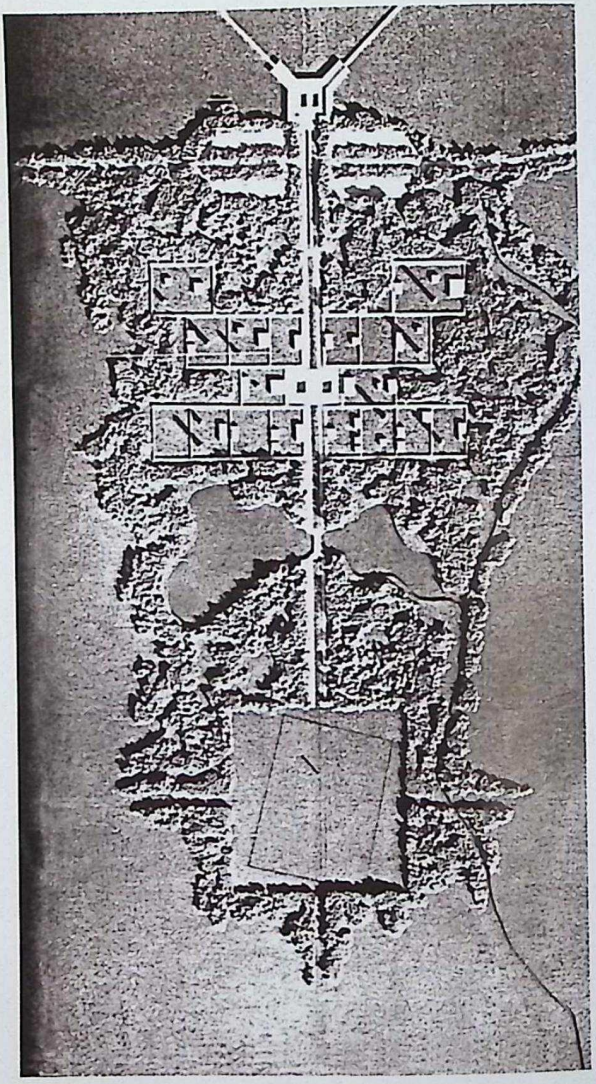

Master plan from the UN brochure, 1970
This is an image of a very similar model used in the Allchin-Matsushita report

from the outside world. Land uses in these areas would be strictly controlled and comprise open fields interspersed with groves of trees to provide shelter and wind protection.

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The Pilgrim Village:
The Pilgrim Village will have to provide accommodation for both pilgrims and tourists on the one hand and the local population on the other. Conceptually it is essential that the Village is not just another tourist centre, but an integral part of the whole Lumbini complex, and therefore, built to highest standards of construction. One possible form might be that of a central open square lying on the main access road from Bhairahawa, surrounded by public service and commercial buildings.

The Monastic Enclave:
Walking south from the Pilgrim Village in the direction of the Sacred Garden, the visitor would first encounter the monastic enclave. It is proposed that this enclave should include a site museum containing the antiquities recovered during the excavations together with the other material depicting the life of Buddha. It would also have a small library and information centre, and a group of shrines, monasteries and places of worship to be constructed by individual states and institutions. The area might assume a diversity of styles in keeping with the free development and diversity of Buddhist sects, yet preserve an air of tranquillity which would prepare the visitor for the experience of the Garden itself.

The Sacred Garden:
It is not possible at this stage to be specific about the treatment of the Garden, for much more study and thought would have to be devoted to this area. The essence of the design should be to create an atmosphere of tranquillity, universality and clarity consistent with the idea of the birth of Buddha. All planting and landscaping would reflect this aim and all structures would have to be built to highest standards of design. Before proceeding further with any detailed plans. It would be essential to make a careful inventory of everything which is presently on the site, and conduct a thorough archaeological survey.

UN Lumbini Development Project Report of the Advisory Panel (1971)

In August 1971, Kenzo Tange and his study team presented the conceptual Master Plan design to the ICDL Advisory Panel in Tokyo, Japan. The participants of the

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Advisory Panel included representatives from India, Japan, Malaysia, Nepal, Sri Lanka, Thailand, the United Nations and UNDP. The study team from URTEC was comprised of Kenzo Tange, Sadao Watanabe, Kazuyuki Matsushita, Atsushi Arata and Nachio Trisu.

According to the agreement between the United Nations and the office of Kenzo Tange and URTEC, the preliminary design was to be prepared in two stages. In the first stage, the Advisory Panel was to provide comments and recommendations on the study team's presentation and in the second stage, they were to review the preliminary designs for Lumbini that would be drawn up based on their earlier recommendations.

The preliminary designs document identified the land use controls for the surrounding areas and defined the outline of the area under development. The Lumbini Sacred Garden constituted an area of one by one mile, with two additional one by one mile areas due north to be sites for the Monastic Zone and the New Lumbini Village, respectively. This area of three square miles was in the process of being acquired by the Government of Nepal. On both sides of the one by three mile strip were one by three mile restricted areas which had the option for future integration into the project, creating a total area of nine square miles for the Lumbini Project. It was suggested that the Government of Nepal should adopt zoning regulations for a total area of twenty five square miles, thereby assuring the preservation of the surrounding predominantly agricultural land.

Final outline design for Lumbini (1972)

In 1972, Kenzo Tange was awarded the consultancy for the preparation of the Master Plan for the development of Lumbini by the United Nations. At a 1972 meeting of the Advisory Panel, an overall layout was adopted. To the northeast, the New Lumbini Village was earmarked for accommodation and service facilities. A central link canal was to connect the New Lumbini Village and the Sacred Garden. This central axis of about two kilometres in length included squares as entrances to the Cultural Centre and the Monastic Areas. The Cultural Centre was designed with a library and a museum. The monasteries would house monks and pilgrims from national and international Buddhist communities. The main challenge in designing

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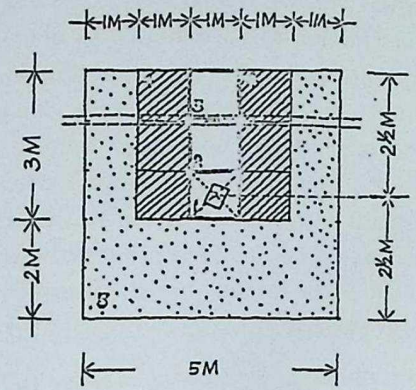

1. – Sacred Garden
2. – Monastic Zone
3. – New Lumbini Village
4. – Restricted Areas
5. – Agricultural Zoned Area (Buffer Zone)

Concept sketch of the 5 x 5 mile Master Plan

Perspective view of the Master Plan, 1972

the axis was to create a comfortable environment, which was quiet, protected from the sun and not monotonous, enabling visitors to walk a long distance without being tired both physically and mentally. Therefore, a narrow canal was proposed, aligned with the axis and with pedestrian paths and rows of trees on either side. The water body shaded by trees was intended to create a refreshing environment and the canal was to be used by non-motorized boats.

The Sacred Garden was planned within a 1,000 metre diameter circle with the Asoka Pillar in the centre surrounded by water features and forests in order to create a buffer to the outside world. A 100 metre square grid system was placed over the area facilitating the alignment of pedestrian paths. Furthermore, the excavation and preservation of ruins was at the centre of the design of the Sacred Garden.

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At the first meeting of the Advisory Panel it was decided that no physical symbol should be adopted in the design of the Sacred Garden. The symbolic value of the site was to be reflected by the garden itself. The basic principle of the design for the garden was to create a quiet natural environment by prohibiting the construction of new buildings. However at the second meeting of the Advisory Panel, members felt that a symbol and an area designed for worship might be needed. It was decided that as a symbol, the Asoka Pillar and the remains of the Mayadevi Temple should be incorporated in a harmonious and unified way. The panel recommended that archaeological research and excavation work should be carried out first so that the findings could be incorporated into the design process.

Master Design for the development of Lumbini (1976-1981)

In 1976 major design changes were introduced (Stage I Report). The rectangular peripheral road was eliminated and several existing villages were incorporated, thereby losing the symmetry of the original plan. The location of the Lumbini Centre was moved off-centre from the Central Link and the new forested areas were limited to surround buildings and the Sacred Garden but not covering the entire project site, thus preserving most of the agricultural land. Additionally, the grid size changed from 100 metres to 80 metres, allowing for more flexible plot sizes in the Monastic Enclave.

Advisory Panel members criticised the changes, noting that the simplicity and clarity of the first concept plan were lost; however, the Government of Nepal did not want the villages incorporated into the project site. Concerning the Sacred Garden, the response was that the natural and artificial water bodies needed to be kept separate and that the "road surrounding the Sacred Garden should be placed outside the water network. In this way the water network can act as a further barrier separating the Sacred Garden from the outside world." [Tange and Urtec, 1977, p. 3]

The Stage II Report submitted in 1977 reverted back to the original rectangular shape of the site.

In 1978, the final report of Phase II was submitted. This provided what was basically the final shape of the Master Plan and subsequently only minor changes and adjustments were made. This plan reverted back to the rigid border of the project

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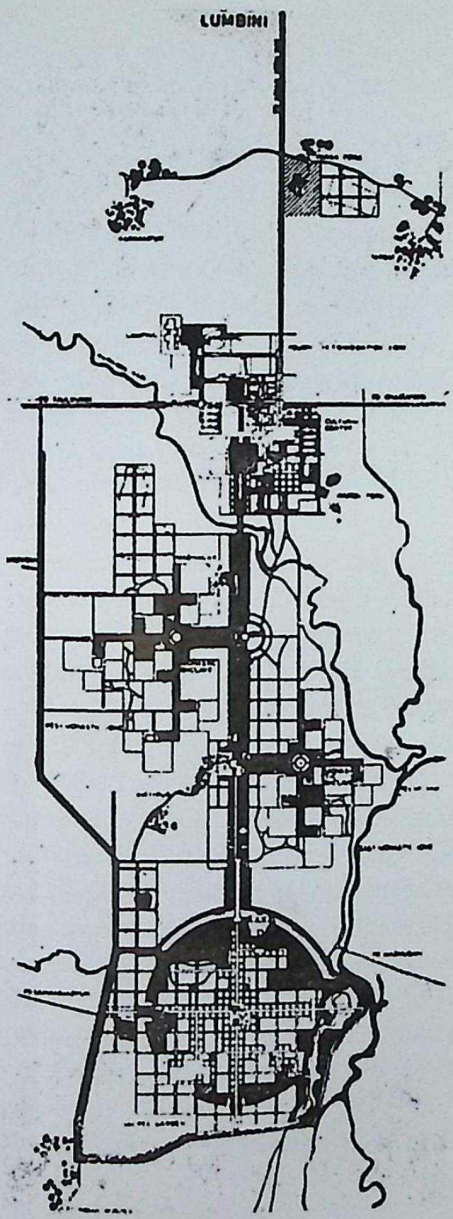
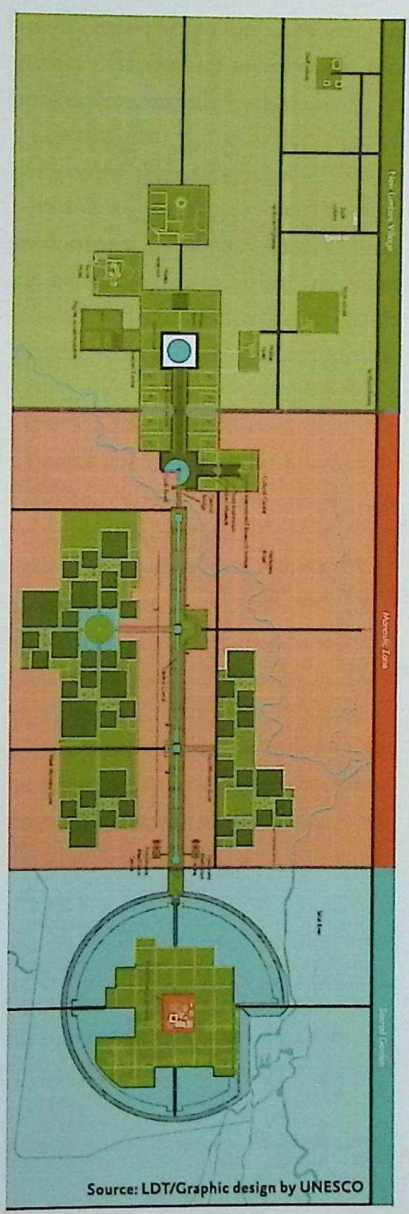


Master Plan layout, 1976



Final Kenzo Tange Master Plan layout

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site as shown in the 1972 plan. The entire master plan area was overlaid with a square grid system of 80 metres. In the monastic zone, a sub-system of 40 metre grids was introduced, and the circle around the Sacred Garden was drawn at 800 metres.

Kenzo Tange made every effort to emphasize the values of Lumbini through the Master Plan. According to Kenzo Tange, the overall intent was to reinforce the symbolic entity of the Lumbini Garden in its simplicity and to create an atmosphere of tranquillity, universality and clarity consistent with the idea of the birth of Buddha, and this concept was followed through all alterations of the Master Plan. The geometric interpretation of the Master Plan is based on religious symbolism: the five by five mile area represents a *mandala*, with the Sacred Garden acting as the focal point at the centre. The Master Plan mainly consists of circles, squares and lines which are laid out with a definite order, proportion and relationship to each other.

The Lumbini Village functions as an entrance area to the ultimate destination: the Sacred Garden, the birthplace of Lord Buddha. It provides administrative services to visitors, representing worldly life which symbolizes the impure state of mind of the visitors. The second component is composed of the Cultural Centre and the Monastic Zone, which symbolize understanding of knowledge. The visitors seek knowledge through the library and research centres available in the Cultural Centre and the Monastic Zone further south provides insight into religious life. In this way, the visitor is physically and psychologically prepared to absorb the religious values of the site. Before arriving at the holiest site, visitors pass meditation centres which symbolize the spirituality or purification of the mind before entering the Sacred Garden. The Sacred Garden itself symbolizes enlightenment, while the path from north to south symbolizes the path to nirvana or the attainment of final truth. The circular water body around the Sacred Garden symbolizes the fluid inside the mother's womb and the river, which passes through the Master Plan area, the umbilical cord, which connects a baby to its mother.

Conceptual elements of the Kenzo Tange Master Plan

Kenzo Tange recommended integrating the Master Plan into the wider economic context and the regional development plan of the Gandaki-Lumbini area. The development of Lumbini was intended to have a positive impact on the surrounding

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region not just through tourism, but by also providing service facilities such as a high school, medical centre and cultural facilities. These facilities were planned to have good access from the regional artery, the Taulihawa–Bhairahawa Highway.

Delineation of the site:
The one by three mile project site was favoured by the Government of Nepal even before the Allchin-Matsushita Report was created. Following various proposed alterations, the rectangular shape was finalized, with the addition of a one by three mile restricted area on either side, along with an agricultural area covering the remaining parts of a five by five mile square.

Land use plan:
Though the layout of the Master Plan changed in each planning phase, the basic structure including the Lumbini Village, Monastic Enclave and Sacred Garden, and the Central Link, were retained. Within the one by three mile area, the density of land use activities was higher along the central axis. Lumbini Village was earmarked for pilgrim and visitor accommodation while the Monastic Enclave was to be the site for Buddhist temples of all sects, where monks and nuns could carry out their religious practices. The main archaeological site of the Sacred Garden was encircled by the levee and large water bodies.

Archaeological sites:
One important concern of the planners was the protection of archaeological sites, particularly as the exact location of some of the important ones believed to be in the Sacred Garden was not known.

Landscape:
The landscape design was contained within the designated forest area along the edge of the one by three mile project area. This was to be enhanced by rows of tall Sal trees along the central axis and water bodies such as the central canal and those around the Sacred Garden. The Sacred Garden itself was earmarked as a predominantly grassed area.

Layout of the major monuments and axis:
One of the distinctive characteristics of the Master Plan is the strong linear axis dominating the entire area by using topographical and visual features. By utilizing

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the Asoka Pillar and the view of the Himalayan mountain range, the north-south axis provides the spine of the site.

Transportation system:
The main entrance to the site was located at the crossing point of the central axis and the Taulihawa-Bhairahawa Highway. Visitors were supposed to move along the Central Canal passing through the Monastic Zone to the Sacred Garden either on foot or by using boats. The service roads were located along the periphery of the one by three mile area, keeping vehicular and pedestrian traffic entirely separated with the aim of providing a quiet environment.

Approach to the Sacred Garden:
Kenzo Tange's idea was to create an "enlightening experience" when moving from the north entrance into the Sacred Garden. The Lumbini Village area with the Lumbini Centre was planned to be located on the main highway and included accommodation and commercial facilities. This was the point where visitors were to leave their daily life behind and enter a more spiritual world with the atmosphere changing from the mundane to the sacred. The design also allowed for a transition from an artificial built up area to a natural landscape. The visitor would be guided from an area with brick buildings, along the central canal with rows of trees towards the Sacred Garden which was to be surrounded by water, with paths of top soil and a landscape covered with grass. After seeing the Asoka Pillar and Sacred Garden visitors would depart the site with views of the Himalayan mountain range.

Monastic Zone:
The Monastic Zone consists of two monastic enclaves; to the west of the Central Canal for Mahayana and to the east of the Central Canal for Hinayana schools of Buddhism. There are 42 plots with the provision for future extensions of up to 104 plots. The Monastic Zone consists of a framework of squares, pedestrian walkways, fences, walls, entrance courts and service yards, within which individual architecture can be realized with both flexibility and unity. The buildings were not to be built higher than three storeys.

The Sacred Garden:
No structure other than the existing archaeological remains should be allowed in the Sacred Garden. All modern structures existing in this area were to be removed

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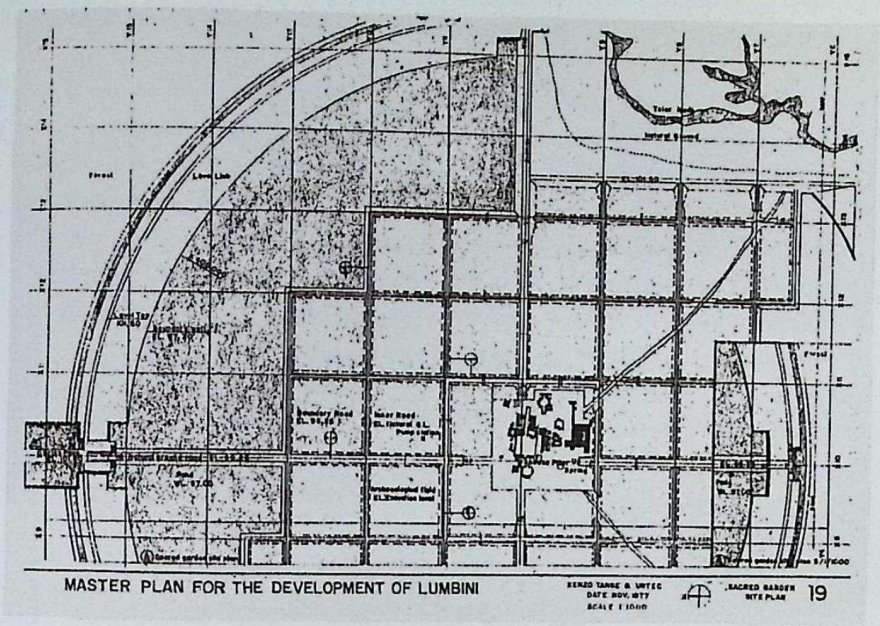

Detailed plan of the Sacred Garden, Nov 1977

and only historically authenticated archaeological vestiges were to be conserved. A grid system comprising of 80 × 80 metres was to mark the pathways and plots for archaeological survey.

One of the key issues for the Master Plan was how to deal with the potential archaeological areas that had not yet been excavated. This factor of uncertainty was solved by Kenzo Tange using a grid system which he describes in a book published in 1980.

> "Archaeologists place great hope for finds in the vicinity of the garden, though thorough excavations have yet to be carried out. Many people felt that it was necessary to erect something in the centre of the garden that would serve as a symbol. But we did not agree. Our proposal is to surround and protect the area from which archaeological finds are expected to be forthcoming by means of a pond laid out to suggest the mandala (a Buddhist graphic representation

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of the cosmos). Within this area, a grid of walkways is to be planned at intervals of 80 metres. Visitors are permitted to walk only on these paths. The ground is left undisturbed until archaeologists have a chance to dig. The things uncovered in their excavation will themselves serve as monuments. Nothing new will be added to the site at all. We have received approval for this proposal, which is an example of the importance of protecting things and places of historical importance." [Tange, 1980]

The basic design principle for the Sacred Garden was to create a quiet, natural environment by prohibiting the construction of new structures and eliminating and relocating any modern twentieth century buildings. The Sacred Garden would be composed only of the Sacred Area, the Tank Area and the Forest Area. The Master Plan proposed to provide a minimum of service facilities in the Sacred Garden area. The archaeological office and the utility block were to be constructed at the eastern portion of the levee embankment.

"The Sacred Garden is the focal point of the Lumbini Garden to symbolize the birthplace of the Lord Buddha. The form of a circle enclosing squares embodies the mystic symbol of the universe in the Buddhism with purity and simplicity. The sacred area surrounded by the pond and a circular levee link to protect against the inundation is not permitted to accommodate any kind of construction to preserve its archaeological value, and introduced only with the design elements of the pedestrian grid and its approach system to an excavation unit. These elements should have appropriate dimensions and positions to retain the conservation of excavated or unexcavated areas undamaged." [Tange and Urtec, 1978, pp. 19-20]

Potential areas for archaeological discovery are widely dispersed in the whole area and the construction of roads or levees must take this into account. When an unexpected discovery occurs in critical areas, the layout can be modified without altering the basic system. The modification may include the use of bridges over significant archaeological remains.

The physical design of the Sacred Garden is also conditioned by the technical need for water management. The dominant natural features of the site are the Hathaway

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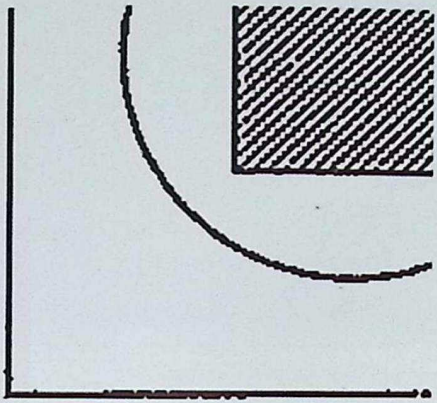
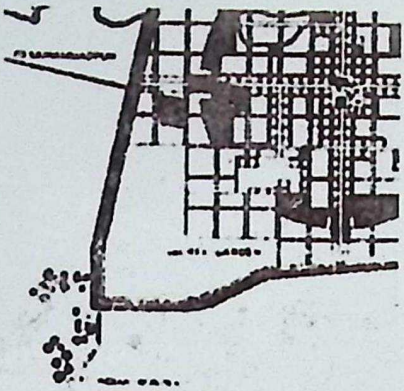
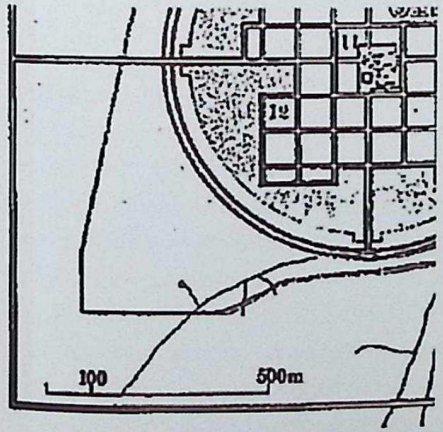
1972



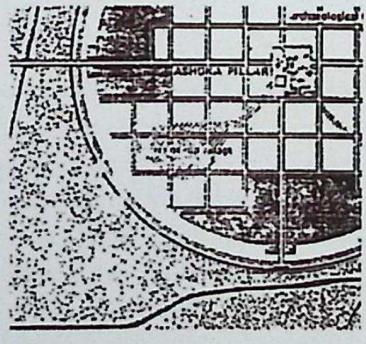
1976



1978



1981



Changes to the layout of the Sacred Garden within the circular pond

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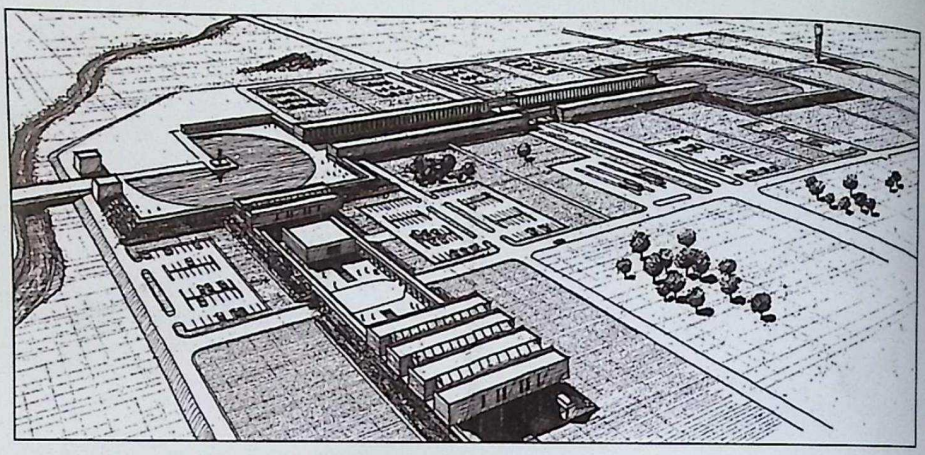

An early perspective rendering of the cultural centre and New Lumbini Village.
View from the south-east, 1979.
The buildings to the East of the circular pond were later to become the Museum and LIRI library. At this time the buildings were designed in a simple cubic fashion which was only later adapted to the barrel vault design seen in the drawing on the right.

Ghurkha and Telar rivers although they are mostly dry between October and May. However, during the rainy season they flood the surrounding regions. As an integral component of the archaeological preservation plan, a circular levee link is to be built around the excavation area to protect it from flooding. In order to conserve the natural aspect of the Telar River, a south-east segment of the levee link would be modified to keep its natural shape.

An excavated pond area lies inside the levee link to facilitate drainage from the Sacred Garden. The water level at 97 metres lies three metres below the base of the Asoka Pillar. The Sacred Pond is fed through a pipe from the link pond. A gate at the southern corner maintains the water level at 97 metres. On top of the levee link is a four metre wide circuit road with stone lined edges. Both sides of the circuit road are graded and they are surfaced with grass to protect it from water erosion.

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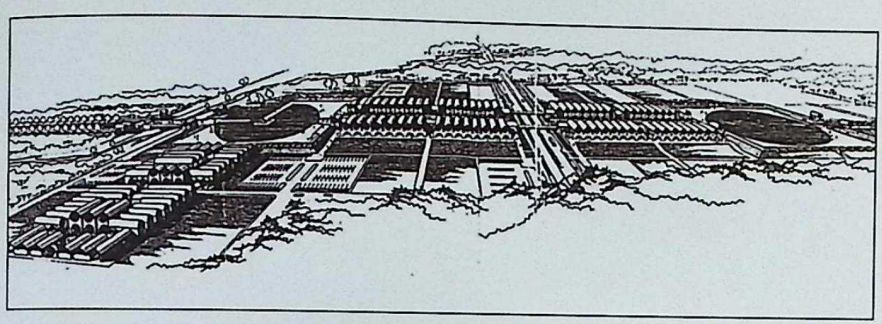

Perspective of the Cultural Centre and New Lumbini Village.
Note the new barrel-vault design of the Museum and LIRI on the left.
View from the east, 1981

Architectural Design for the Lumbini Garden (1981)

The draft document provided details on the design of the Lumbini Centre, Cultural Centre, Central Link and Sacred Garden. In order to create inter-relationships between the various functions and activities and to organise the movements and activities of visitors, an integrated arcaded space was introduced along both sides of the Central Canal providing necessary facilities. Trees were not to be planted around the buildings of the Lumbini Centre and the Cultural Centre. This had the purpose of providing an unobstructed view of these buildings from a distance and to strengthen their impression as a gateway to the Lumbini Garden. The layout of the southwest corner of the Sacred Garden around the village mound was also revised.

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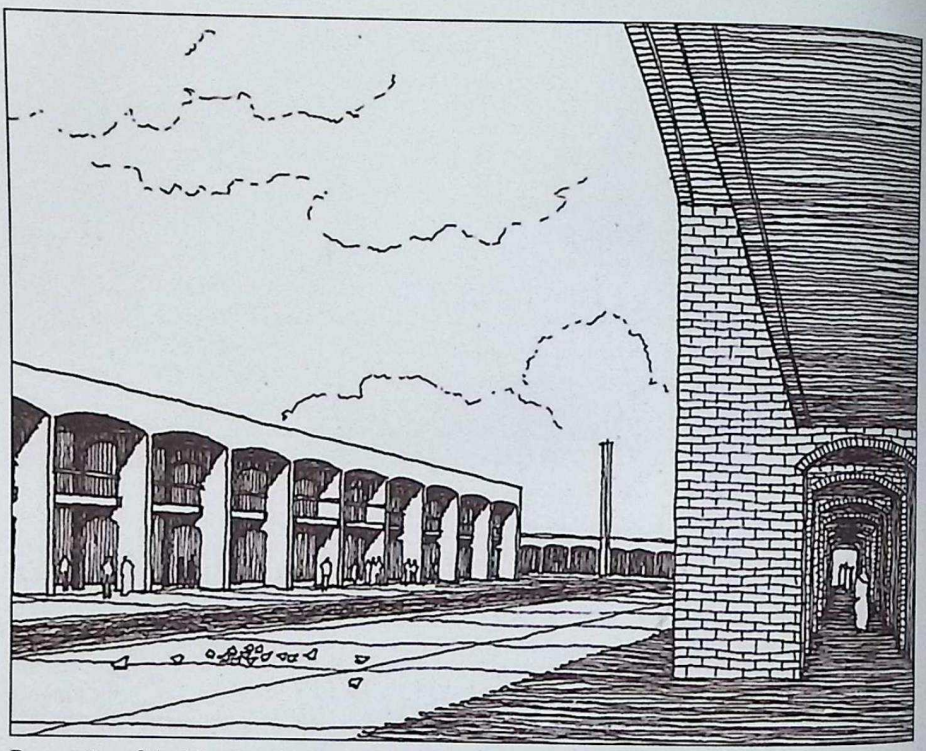

Perspective of the New Lumbini Village, 1979

Major changes during planning and implementation phases

The Master Plan was developed over a long period starting in 1967. The need for land use management around the main one by three mile project area was proposed at an early stage. In the 1971 report to the Advisory Panel, Kenzo Tange proposed a five by five mile agricultural zoned area including a three by three mile restricted area. The land use control was officially stated in the 1971 Final Outline Design document but in later reports seems to have been ignored.

Some of the main changes during the planning phase were the relocation of boundaries and the response to the surrounding areas. Also, the size of the circular levee around the Sacred Garden changed from a thousand metres to eight hundred

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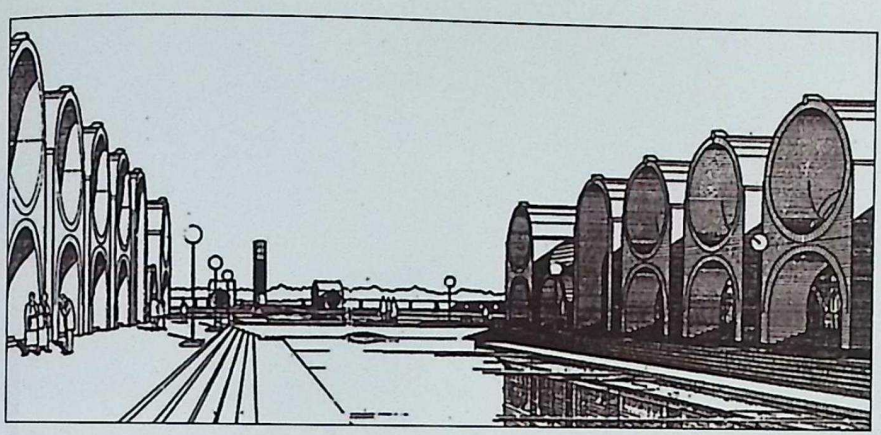

Perspective of the New Lumbini Village, 1981

metres in diameter and the shape of the Sacred Garden and the water body were repeatedly modified as knowledge of the archaeological sites improved.

Regarding the Village Mound in the south west, it was assumed that little would have remained from the village structures since the building materials had very little time-resistant qualities. It was considered desirable that after archaeological investigations were completed, some sort of landscaping be carried out to show the unique village pattern of this area and develop it as a public space. Also, the ancient road pattern was to be reconstructed.

Over the years, construction works have been carried out, that do not follow the essence of the Master Plan. For example, the Peace Stupa and the boundary wall were not part of the original design and some of the monasteries were constructed against set regulations on height and axial relations.

Further discussions are required regarding the planning of the Sacred Garden area beyond the levee. This area could be developed into a forest and could accommodate various functional requirements that need to be removed from the Inner Sacred Garden, the World Heritage area and the Buffer Zone.

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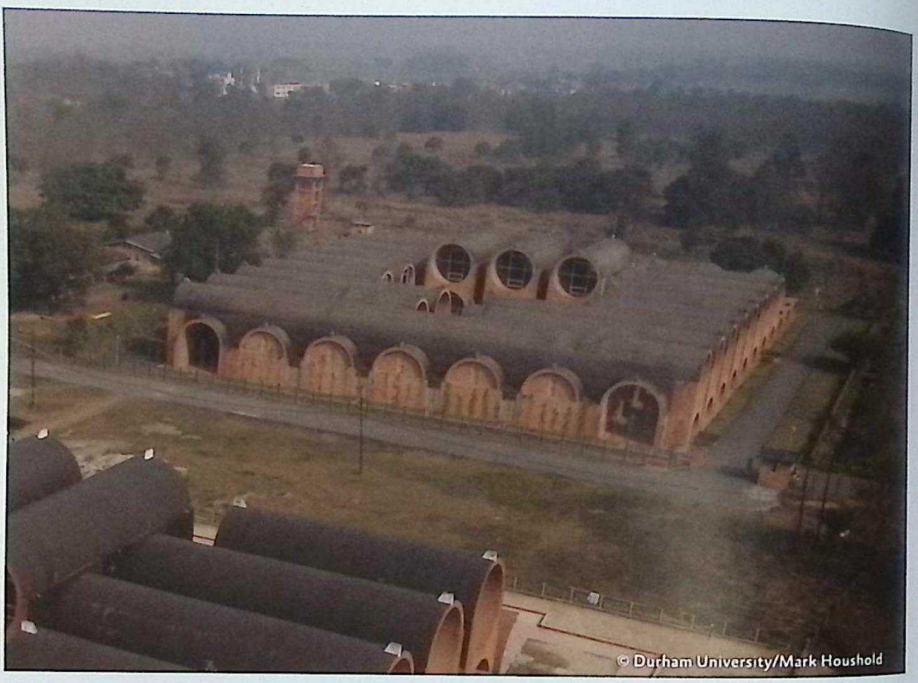

The Lumbini International Research Institute

Due to the fact that the implementation of the Kenzo Tange Master Plan has been slow, it has provided the opportunity for serious scrutiny concerning both functional attributes as well as its philosophical concept. The practical aspects have restricted themselves to the required infrastructure and services for visitor numbers that are much higher than originally expected. There have also been discussions regarding the forms of transportation for the visitors along the central canal.

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Aerial view of the Lumbini Museum with the Peace Stupa in the background

Interior of the Lumbini Museum

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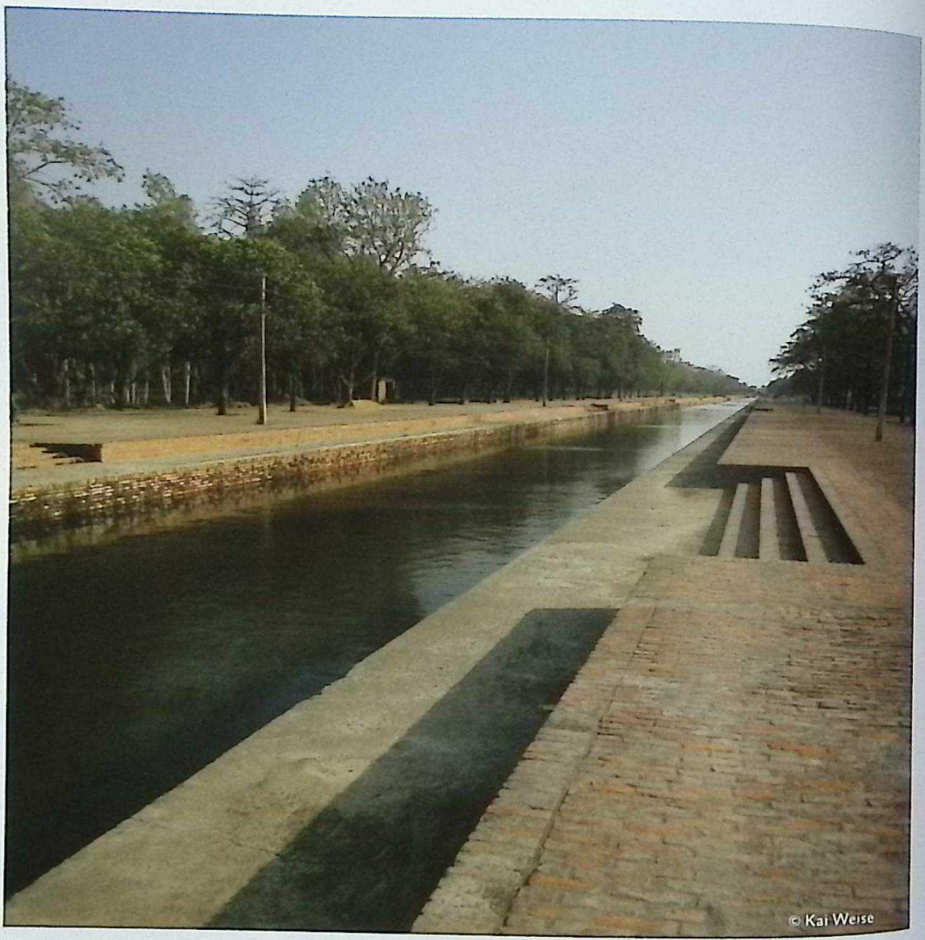

The Central Canal

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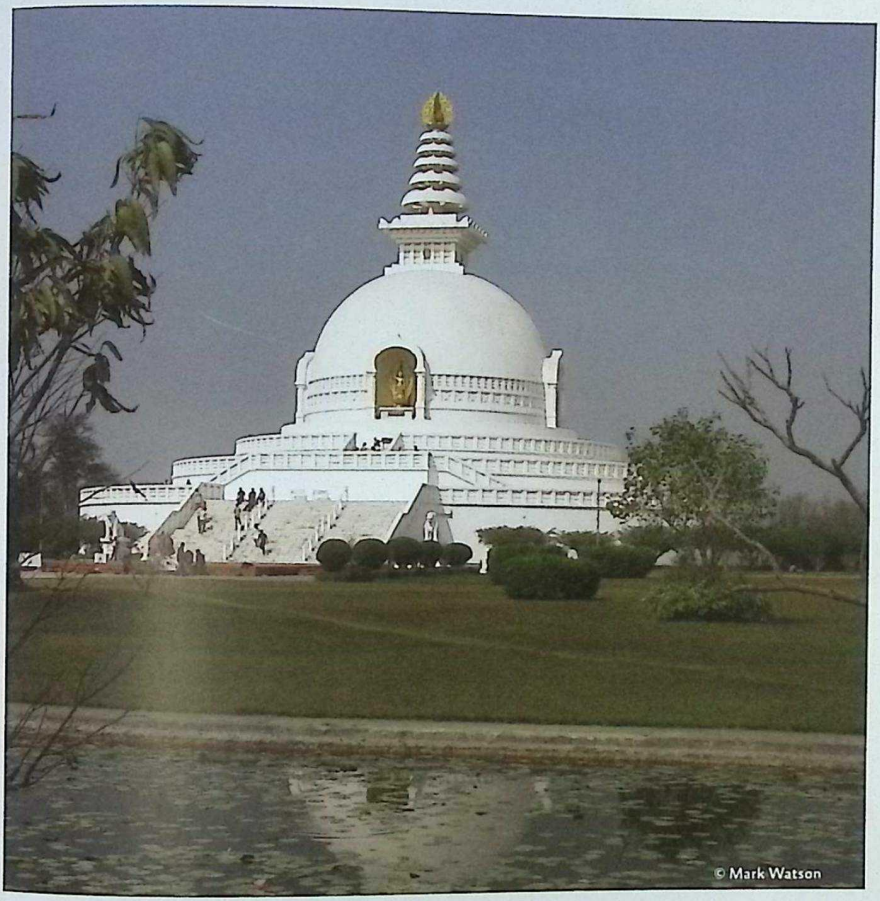

The Peace Stupa

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CHAPTER FIVE

Lumbini as a World Heritage Property

Herb Stovel
with Basanta Bidari and Kai Weise

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Lumbini's central area of 130 by 150 metres was inscribed on the List of World Heritage in 1997, with the remaining part of the inner Sacred Garden designated as the buffer zone. The possible modification of the boundaries to include the entire Inner Sacred Garden within the boundaries of the World Heritage Property and to extend the buffer zone to the entire outer Sacred Garden has been discussed since 2005.

History of the World Heritage nomination

The initial nomination of "Lumbini and associated sites" was submitted to the World Heritage Committee in 1993 and was deferred by the World Heritage Bureau at its seventeenth session in June 1993.

> "The Bureau recommended that the inscription of this property on the World Heritage List be deferred until the Nepalese authorities provide precise information on conservation measures and site management which are in conformity with international standards. Also, as a prerequisite for the future examination of the nomination, the Bureau requested the competent authorities to supply an Indicative List of properties that Nepal might wish to propose for inscription in the future."[1]

> "The original nomination of 1993 included a number of separate archaeological sites associated with the life and work of the Lord Buddha. Two of these, Kapilavastu (Tilaurakot), where the Lord Buddha lived as Prince Siddhartha before his enlightenment, and Ramagrama, the only relic stupa not opened by Asoka, ... ICOMOS ... is of the opinion that the current state of knowledge, conservation, and management of both is not sufficiently advanced to permit them being included in the present nomination. It recommends, therefore, that this should await the completion of the program of non-destructive archaeological investigation, using geophysical techniques ... and the preparation of satisfactory conservation and management plans. Once this work has been completed, the State Party should be invited to submit the two sites as extensions to an existing inscribed site of Lumbini, with a change of title indicating the association of all three with the life and work of the Lord Buddha."[2]

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Remains of monastries in the Sacred Garden

A new nomination under the title "Lumbini, the Birthplace of the Lord Buddha" was submitted to the World Heritage Committee in June 1996. The new nomination was reviewed by ICOMOS in September 1996 and the recommendation was made to inscribe the property on the basis of criteria (iii) and (vi). Criterion (iii) requires the heritage property to "bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared." Criterion (iv) requires the heritage property to "be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance."[3]

The World Heritage Committee inscribed Lumbini on the List of World Heritage on 6 December 1997 during its twenty-first session with following annotations:

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"The Committee decided to inscribe this site on the basis of criteria (iii) and (vi). As the birthplace of the Lord Buddha, the sacred area of Lumbini is one of the holiest places of one of the world's great religions, and its remains contain important evidence about the nature of Buddhist pilgrimage centres from a very early period. The Delegate of Thailand declared that apart from Lumbini, there are two other sites closely associated with Buddha, which are in the process of preparation to be presented as serial nominations and that he hoped that the Committee would consider them in this context."[4]

Reactions to the nomination

The inscription of Lumbini on the World Heritage List was considered by many as an international certification that Lord Buddha was born in Nepal, which would make earlier discussions on the national ownership of the site obsolete. However, considering that today's state borders did not exist at the time of Lord Buddha's birth, these debates appear to be rather rhetorical. Since the "re-discovery" of Lumbini and of the inscription on the Asoka Pillar, the position of Lumbini and thereby the birthplace of Lord Buddha has not been seriously questioned.

The inclusion of the sites of Tilaurakot and Ramagrama in the initial nomination dossier of 1993 further underlined the international recognition of these important sites linked to the life of the historical Buddha. These two sites were placed on the Tentative List for World Heritage but not included in the nomination dossier submitted in 1996. However, when Lumbini was inscribed on the World Heritage list during the twenty-first session of the World Heritage Committee in 1997, some participants, notably the Delegate of Thailand, underlined the importance of the link between Lumbini, Tilaurkaot and Ramagrama.

The inscription of Lumbini on the World Heritage list also underlined the importance of conservation within an area determined for development of an international religious centre and site of pilgrimage. Through the nomination, the Government of Nepal, as State Party to the World Heritage Convention, made a clear commitment to safeguard the attributes that express Outstanding Universal Value. At the same time, many stakeholders were conscious of the fact that international and local interest in contributing to the beautification and ornamentation of the

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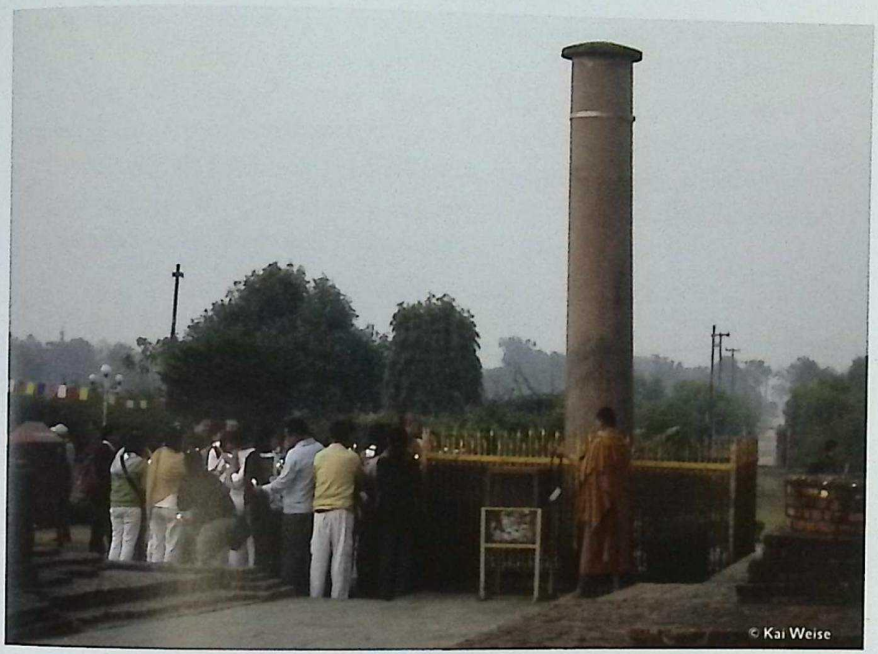

The Asoka Pillar

archaeological site would entail the risk of an inappropriate competition between donors, each trying to construct larger and more intrusive structures in and around the sacred site.

Attributes and elements of Outstanding Universal Value

There are various elements that are specifically mentioned in the Nomination Document as being of Outstanding Universal Value. The complex of structures within the archaeological conservation area that is the subject of this nomination consists of the following:

"• The Śakya Tank, in which Mayadevi bathed before giving birth to the Lord Buddha, within the Mayadevi Temple enclosure. The original temple was built before the visit of Aśoka in 249 BCE and probably consisted of no more than a platform constructed on the cross-wall system, later converted

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into a shikara temple. The 20th century temple has now been demolished, leaving on display the remains of brick structures dating from the 3rd century BCE to the present century.

- The sandstone Aṣoka Pillar with its Sanskrit inscriptions, that of Aṣokan brahmi script and the later one of Ripu Malla in devanagari script.
- The excavated remains of Buddhist *viharas* (monasteries) of the 3rd century BCE to the 5th century CE. The rectangular pool between them dates back to the 20th century.
- The remains of Buddhist *stupas* (memorial shrines) from the 3rd century BCE to the 15th century CE."[5]

"Since the inscription of Lumbini onto the World Heritage List there have been various archaeological excavations and surveys that have revealed numerous new findings or clarified earlier theories. One of the important new finds was the Marker Stone which was not yet discovered at the time of inscription. In addition to these elements, there are clearly further archaeological sites that are linked to this central area. The potential archaeological sites extend at least toward the north and southeast of the inscribed site. The village mound that has been identified towards the southwest is clearly an early village that existed during the lifetime of Siddhartha Gautama. The extent of archaeological remains spread out even beyond the buffer zone defined by the surrounding water body, since an early well has been found towards the southwest beyond the village mound. It is today known as the "nursery well", since it is located in the garden nursery of the Lumbini Development Trust. The Sacred Area that forms the nominated property lies within a modern circular feature defined by a moat and this in turn forms part of a modern monumental pilgrimage centre based on two monasteries. Outside the nominated area, but within the buffer zone, there are other religious buildings of the 20th century and buildings in use by the Lumbini Development Trust, all of which are scheduled for demolition."[6]

In addition to the unique archaeological vestiges, an important attribute are the characteristics of the site as pilgrimage site probably since the lifetime of Gautama Siddhartha. This also contributes to Lumbini being of Outstanding Universal Value. It is therefore essential, in addition to all else, that Lumbini continues being a site of pilgrimage.

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Statement of Outstanding Universal Value

Since 2007, all World Heritage Properties are required to prepare statements of Outstanding Universal Value (OUV), which allow for a clear understanding of the property at the time of inscription. The statement must define why the property is considered to be of OUV, thereby giving direction to management by defining the attributes that need to be retained in order to sustain OUV.

The World Heritage Committee at its thirty-sixth session at Saint Petersburg in 2012 adopted the retrospective Statement of OUV for Lumbini.

Brief Synthesis:

Lord Buddha was born in 623 BCE in the sacred area of Lumbini located in the Terai plains of southern Nepal, testified by the inscription on the pillar erected by the Mauryan Emperor Asoka in 249 BCE. Lumbini is one of the holiest places of one of the world's great religions and its remains contain important evidence about the nature of Buddhist pilgrimage centres from as early as the 3rd century BCE.

The complex of structures within the archaeological conservation area includes the Sakya Pond (*Pushkarani*), the remains within the Mayadevi Temple consisting brick structures in a cross-wall system dating from the 3rd century BCE to the present century and the sandstone Asoka Pillar with its *Pali* inscriptions in *Brahmi* script. Additionally, there are the excavated remains of Buddhist *viharas* (monasteries) from the 3rd century BCE to the 5th century CE and the remains of Buddhist stupas (memorial shrines) from the 3rd century BCE to the 15th century CE. The site is now being developed as a Buddhist pilgrimage centre in which the archaeological remains associated with the birth of Lord Buddha form a central feature.

Integrity:
The integrity of Lumbini has been achieved by means of preserving the archaeological remains that give the property its OUV within the boundaries. The significant attributes and elements of the property have been preserved.

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The Buffer Zone gives the property a further layer of protection. Excavations of archaeological sites and appropriate protection of the archaeological remains are of high priority for the integrity of the site. The boundaries, however, do not include the entire archaeological area and various sites found in the Buffer Zone. The effects of industrial development in the region have been identified as a risk to the integrity of the property.

Authenticity:
The authenticity of the archaeological remains within the boundaries has been confirmed through a series of excavations since the discovery of the Asoka Pillar in 1896. The remains of *viharas*, stupas and numerous layers of brick structures from the 3rd century BCE to the present century at the site of the Mayadevi Temple are proof of Lumbini already having been a centre of pilgrimage from early times. The archaeological remains require active conservation and monitoring to ensure that the impact of natural degradation, influence of humidity and effect of visitors are kept under control. The delicate balance must be maintained between conserving the archaeological vestiges of the property while providing for pilgrims.

Management
The property is protected as per the Ancient Monument Preservation Act 1956 and is owned by the Government of Nepal. The site management is carried out by the Lumbini Development Trust (LDT), an autonomous non-profit organization. The property falls within the centre of the Master Plan area, the planning of which was initiated together with the United Nations and carried out by Kenzo Tange between 1972 and 1978. [7]

Boundary, buffer zone and zones of influence

The World Heritage boundary encompasses an area of 130 by 150 metres which includes the Asoka Pillar, the Shakya Pond and the archaeological vestiges of *viharas* and stupas around the Mayadevi Shelter. It however does not include extensions of the archaeological sites to the north and the southeast. Furthermore, the boundary does not encompass the Village Mound towards the southwest area.

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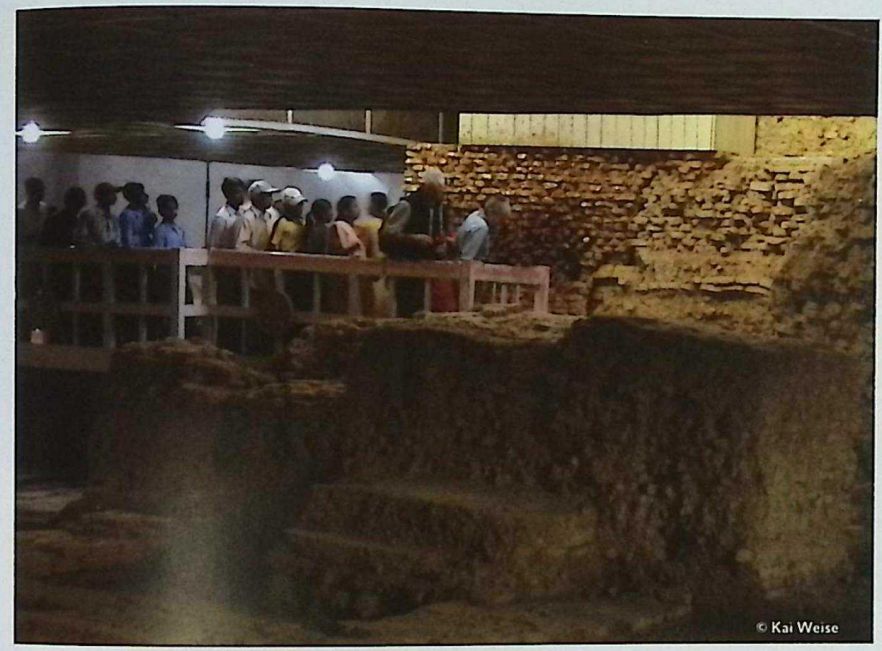

Ancient brickwork inside the Mayadevi Temple, 2008

The World Heritage Buffer Zone is defined by the area within the water body as demarcated in the Kenzo Tange Master Plan. At the time of inscription the water body had not yet been excavated. It was assumed that such a radical intrusion within the existing natural surrounds would hardly have been allowed within the Buffer Zone and therefore this area was excluded. However, for the long-term protection of the World Heritage Property, the entire Sacred Garden area would need to be maintained as a forested area as a shield from the pressures of surrounding developments.

The Ancient Monument Preservation Act 1956 is the primary legislation for "preserving ancient monuments and … controlling the trade in archaeological objects as well as the excavation of the place of ancient monuments and by acquiring and preserving ancient monuments and archaeological, historical or artistic objects." As a World Heritage Property, Lumbini requires the highest level of national protection which could be achieved by declaring it a "Protected Monument Zone."

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Management challenges

A World Heritage Property is by definition a highly valued site, which attracts curious tourists, devoted pilgrims and visitors wanting to contribute to or profit from such an important place. Even those with the best of intentions, when visiting or contributing to the maintenance, conservation or development, might have a negative impact on the heritage property. Those who want to invest in the heritage site might like to improve the infrastructure and services and provide new activities. They also could want to create monumental structures for merit or introduce profitable businesses. Though inevitable and not necessarily unwanted, these activities need to be monitored in order to minimise any negative or irreversible effects.

Every World Heritage Property requires a clearly defined management system.

> To be deemed of Outstanding Universal Value, a property must also meet the conditions of integrity and/or authenticity and must have an adequate protection and management system to ensure its safeguarding.[8]

The management process for Lumbini was developed through a consensus of the concerned authorities. Discussions have been held since 2006, with a series of specific workshops carried out between August 2011 and January 2012 as part of the UNESCO/Japanese Funds-in-Trust project "Strengthening conservation and management of Lumbini, the birthplace of Lord Buddha."

The Integrated Management Process must be seen as a road map towards achieving the goal of conserving the OUV of Lumbini. The primary objective of the Integrated Management Process of Lumbini is to protect the OUV of the World Heritage Property as well as to ensure that the fate of Lumbini becomes the catalyst for the sustainable development of the Historic Buddhist Region.

Four principles were identified that are to be observed in achieving the management goals: "Significance driven" is the concern for the conservation of the significance of the site and is at the core of the decision-making process, though it must be balanced against the interests of other sectors. "Integrated approach" is the integrated management style that will follow a systemic and holistic approach to conservation, taking into account the significance of the monuments, the cultural and natural

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context within which they are found, and the living heritage that lends them their local value. "Process oriented" is the integrated management style that will focus on the processes and linkages between the components of the site and the various actors to allow realistic long-term implementation. "Sustainability" indicates that the integrated management approach will be prepared and implemented based on an understanding of sustainability: economic, social, environmental, and cultural values.

Key objectives for managing Lumbini

1. To identify the attributes and elements that give Lumbini its OUV, define authenticity and integrity for the site and possibly redefine the boundaries and Buffer Zones.
2. To prepare a plan that provides guidelines and regulations for the physical development of the entire Sacred Garden which ensures the preservation of its OUV, provides for the requirements of pilgrims and visitors, and identifies the means of implementing the plan.
3. To determine an appropriate long-term solution for safeguarding the archaeological vestiges in and around the Mayadevi Temple, which includes an in-depth understanding of the threats to the archaeological remains and appropriate provisions for pilgrims, and to identify the means of implementing this solution.
4. To carry out detailed archaeological investigations of the highest scientific standard including documentation and analysis, the provision of appropriate and adequate means of conserving the archaeological remains within the Sacred Garden and where necessary throughout the Master Plan area, to identify the means of implementing these projects.
5. To provide for the needs of the pilgrims, taking into account the impact these activities and required facilities have on other visitors, the archaeological remains and the authenticity and integrity of the Sacred Garden, and to identify the means of implementing these provisions.
6. To determine the means of implementing the Kenzo Tange Master Plan, as the basis for defining the development in the five by five mile area around the World Heritage Property.
7. To redefine the Lumbini World Heritage Site boundaries and Buffer Zone, considering the preparation of the Tentative List sites of Tilaurakot and

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Ramagrama for nomination and placing further important Buddhist sites on the Tentative List.

8. To carry out archaeological research and conservation throughout the Historic Buddhist Region, stretching from Lumbini to Tilaurakot and Ramagrama, the establishment of an integrated plan and provisions for its implementation.
9. To identify the means of ensuring the appropriate development of the Historic Buddhist Region by prioritizing conservation.
10. To facilitate strategies for poverty alleviation of the local communities and to develop tourism by means of improving facilities, services, infrastructure and accessibility of heritage sites in the Historic Buddhist Region.
11. To ensure the serenity and sanctity of the Buddhist sites in and around Lumbini by protecting the environment, controlling the threat of natural disasters and introducing legal provisions and means of enforcing them.
12. To establish coordination between all international partners, national authorities and site managers.
13. To review the status of the Lumbini Development Trust, its objectives, authority and obligations to manage a World Heritage Property and initiate the amendment of the LDT Act and bylaws accordingly.
14. To establish a World Heritage Management Office within the Lumbini Development Trust which includes a database to coordinate, compile and make accessible information related to the Lumbini World Heritage Property.[9]

Lumbini's World Heritage status and the Kenzo Tange Master Plan

The existence of the Kenzo Tange Master Plan was an important element in Lumbini's nomination as a World Heritage Property. At the time of its inscription, the water bodies around the inner Sacred Garden had not yet been excavated. It was therefore considered prudent that this area requiring major development not be placed within the World Heritage area and not even within the buffer zone. The buffer zone was therefore outlined along the planned inner boundaries of the water body as defined in the Kenzo Tange Master Plan. This required the World Heritage boundaries to be reduced to an area of 130 by 150 metres, containing only the main archaeological vestiges around the Asoka Pillar.

This strategy did allow for Lumbini to be inscribed on the World Heritage list without any misgivings from the advisory bodies or the World Heritage Committee.

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The boundaries however did not include all the historical sites in Lumbini. There are several other archaeologically important areas, most importantly the area known as the Village Mound to the southwest corner of the inner Sacred Garden. Recent research provides evidence for an earlier hypothesis that this area covers the ancient Lumbini village referred to in the Asoka Pillar inscription. Even further to the southwest, outside the circular levee, an ancient well was found which might have indicated the alignment of an ancient route. This important archaeological element was not considered by the Kenzo Tange Master Plan, but might need to be part of the World Heritage Property to ensure integrity.

Safeguarding Lumbini depends on controlling development in and around the Sacred Garden. This can only be achieved by ensuring full implementation of the Kenzo Tange Master Plan. First of all, it is important to strengthen the association between the "archaeological footprint" and the OUV of the property. Additionally, there needs to be correlation between the sacred values identified by Kenzo Tange and the specific Outstanding Universal Value recognized by the World Heritage Committee within its inscription of the property. This link needs to be researched and clearly proven since properties are not inscribed for their potential OUV, but for their ability to explicitly demonstrate it.

An extended "zone of influence" encompasses the full five by five mile Kenzo Tange Master Plan. The concept of "zone of influence" is increasingly being recognized as legitimate in World Heritage Committee discussions, given the number of high rise structures outside recognized buffer zones, which threaten the integrity of the Outstanding Universal Value of inscribed World Heritage Properties. There is no doubt that out of scale and out of place structures already constructed, and planned for construction in the five by five mile zone adversely impact the OUV of the already inscribed property and its associated buffer zone. There is a close link between safeguarding the World Heritage Property and the implementation of the entire Kenzo Tange Master Plan. The impact of development activities beyond the inscribed zone should be managed through guidelines that consider disturbance of potential archaeological resources, construction height, scale, controls on defined sight lines and view planes and other features of architectural design. These should not be too prescriptive, but rather reinforce general principles already established in the Kenzo Tange Master Plan and the Operational Guidelines for Implementation of the World Heritage Convention.

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Relation to other territorial heritage sites

Lumbini is closely linked to the heritage found over a territory spanning across three districts (Kapilvastu, Rupendehi and Nawalparasi) encompassing an area of about 80 by 25 km. At present, the Lumbini inscription is built around the central idea that the site is the birthplace of Lord Buddha. The area around the inscribed zone contains significant archaeological resources, and while expert consensus exists around the importance of Ramagrama (as the only unplundered relic stupa associated with the Buddha), the site's hinterland could yield much important information about the use and chronology of the site. Tilaurakot is considered to be the site of origin of Buddha's father's family and "one of best preserved urban forms and environs of any provincial city within the early historic archaeology of South Asia"[10], however much more remains to be learned about its origins and evolution.

The Integrated Management Framework document for Lumbini touches upon the planning of this territory as an historic Buddhist region. "The governance of the Historic Buddhist Region will be carried out under special provisions adopted by the Government of Nepal. Development will take place based on the concept of conserving the heritage sites, particularly the numerous archaeological sites in the region. An appropriate system of governance will be established to ensure the sustainable development of the regions spanning across the three districts of Kapilvastu, Rupendehi and Nawalparasi."[11]

The understanding of the historic Buddhist region in Nepal and the subsequent recognition of the importance of conservation and development depends on the results of future archaeological survey work and on the thematic orientation chosen. For example, the region could be understood to be based on the diverse key sites in the life of the Lord Buddha and afterwards: Lord Buddha's birthplace (Lumbini), and Lord Buddha's father's home where Lord Buddha remained until 29 years of age (Tilaurakot) and the most intact stupa to hold his relics (Ramagrama). There is however also the theme of the birthplaces of the three Buddhas, each site commemorated with an Asoka Pillar: Siddhartha Gautama in Lumbini, Kanakamuni in Gotihawa and Krakuchanda in Niglihawa. A further theme is comprised of the early Chinese Buddhist pilgrim sites commemorating the pilgrimage route associated with Buddha, which were used and developed by visiting Chinese pilgrims. The nature of the OUV for these various combinations of sites, or the individual sites

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The circular pond around the inner Sacred Garden

which could be nominated on their own merits, would need to be adequately and accurately defined with further study and analysis carried out, along with defining the boundaries in preparing for possible new nominations.

In addition it is important to note that the historic Buddhist region stretches across the border into Northern India. This is home to other sacred sites: where Gautama Buddha was enlightened (Bodh Gaya), where he preached his first sermon (Sarnath), and where he attained *mahāparinirvāna* (Kushinagar).

The Mahabodhi Temple Complex at Bodh Gaya is a World Heritage Property, Sarnath is on the World Heritage Tentative List, while Kushinagar has been submitted to the Tentative List by the Archaeological Survey of India as a Silk Road Site.

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CHAPTER SIX

Sacred landscape at risk
The environment of Lumbini

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Botany and the Buddha
The plants of Lumbini

Mark F. Watson & Sanjeev K. Rai

If you stand in the middle of the Greater Lumbini Area it is virtually impossible to visualise what the landscape would have looked like 2,500 years ago when Gautama Buddha was born. During his lifetime everything before you would have been covered in dense forests, but today rice fields stretch as far as the eye can see, criss-crossed by roads and irrigation channels, and dotted with clusters of houses and factories. Trees are seemingly limited to clumps of mangoes (*Mangifera indica*) and other cultivated species planted around villages. What remnant patches of old growth natural forest remain are tucked away in odd corners, sacred sites, on unfavourable land, or winding along river courses. Here they can at least act as wildlife refuges and corridors for their migration - life lines or stepping stones for birds and animals moving north and south, east or west.

Lumbini is located in the centre of the Tarai, a narrow band of low altitude, largely flat ground forming the southern boundary across the length of Nepal. Averaging just 150 metres above sea level, this northern extension of the great Gangetic plain is at most 40 kilometers (25 miles) wide in Nepal. Until the middle of the 20th century

Dense sal forest stands in stark contrast to land cleared for intensive traditional agriculture, where trees are restricted to lining the banks of meandering rivers and pockets of fragmented woodland.

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Riverine forest, with tall leafless simal trees, and 'elephant' grasslands bordering swamps and slow-flowing rivers.

the Tarai was covered by sub-tropical jungles dominated by tall, stately sāl trees (*Shorea robusta*). Meandering rivers cut their way through the dense forests, creating open habitats favoured by tigers and rhinos, and lined with riverine trees such as simal (*Bombax ceiba*, silk cotton tree), sisau (*Dalbergia sissoo*) and khayar (*Acacia catechu*, cutch). River banks and flood-prone areas were covered in tall grasslands as high as elephants, and permanent wetlands were rich in aquatic plants and waterfowl. These alluvial lowlands stretch to the foothills of the Churia (part of the Siwalik hills) where sāl gives way to hill forests, with khote salla (*Pinus roxburghii*, chir pine) making an appearance on higher slopes. Today the Tarai vegetation has all but disappeared through deforestation and land drainage to make way for agriculture, and only degraded fragments can be found around Lumbini. The ancient vegetation of the Tarai is best seen in the nearby national parks of Chitwan and Bardiya, which preserve these habitats and support the typical megafauna of tigers, leopards, rhinos, elephants, sloth bears, gharial and marsh mugger crocodiles, pangolins, wild boars, deer, antelopes, monkeys, and a spectacular variety of birds.

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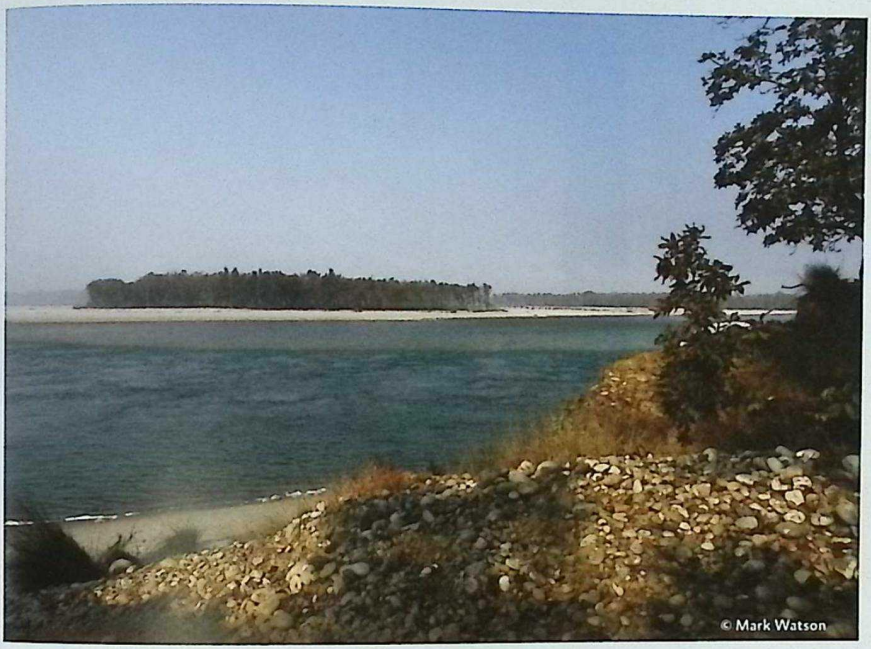

Even major rivers have low water levels in winter, exposing islands of shingle so easily re-sculpted by floods in the summer monsoon.

The sub-tropical climate of Lumbini is rather unusual, partly due to the land being an extension of the dry north-Indian Gangetic plain, but also because of the lack of major snow-fed or mid hill rivers bringing water from the north. In the spring and early summer this is the driest area of the Tarai, but the southwest monsoon and winter rains tend to linger longer in this part of the country, hemmed in by Annapurna Himal and neighbouring massifs. Post monsoon, towards the end of the long summer, and throughout the short winter season, Lumbini is one of the wettest places in southern Nepal with annual rainfall of about 1700 mm. The early summer highs often reach above 40 degrees Celsius, dropping to more moderate 17 degrees during the day in winter. Temperatures rarely fall below 5 degrees in winter, although the winter fogs (now exacerbated by high levels of atmospheric pollution) block out the sun and make it feel much colder.

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Tharu people make extensive use of khar for thatching, and other natural products from the forests and grasslands, when making their traditional buildings.

Forests and grasslands

The natural vegetation of the central Tarai is dynamic, ever changing, shaped by water over thousands of years – the lack of it in winter, and summer excesses. Between June and September the heavy rains of the monsoon swell the rivers, changing their course, cutting new channels, and creating isolated oxbow lakes. Widespread flooding brings devastation, sweeping aside well-established vegetation and saturating the ground. However, this destructive inundation also replenishes, as the flood waters are heavy with silt which settles on the land increasing the fertility of the soil. Newly created sandbanks and riversides are rapidly colonised by kans (*Saccharum spontaneum*), a vigorous pioneer grass with long runners which consolidate the unstable land, trapping nutrients and helping develop the soil. In time other species appear on the riverside terraces, forming tall, dense grasslands which are a haven for wildlife. Often reaching over 2 m high (some to 6 m), these are aptly called elephant grass, or dhaddi, and comprise biodiverse habitats of more than 50 species of grasses and sedges. One of these, Khar (*Themeda arundinacea*, *Apluda mutica*, and *Saccharum*) is harvested in January by the indigenous Tharu

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Dense sal forest interspersed with ash-grey trunks of asna. Termite mounds are a favourite of Sloth Bears in search of food.

people to build and thatch their houses. If the grasslands stay undisturbed, first shrubs and then trees gradually appear, riverine species such as khayar start to grow on the seasonally flooded river terraces and sisau on higher ground, then simal, bhelur (*Trevia nudiflora*) and datingal (*Ehretia laevis*). Eventually, as the years pass and the soil deepens, natural succession leads to the climax sāl forests.

The hot and humid weather of the summer gives way to cooler and drier months of the post monsoon period, with seet-lahar (winter chills) and heavy dewdrops in December and January. Between February and May daytime temperatures gradually increase, with water becoming ever more scarce. The contrast between the summer monsoon and this spring dry period is nowhere stronger in Nepal than in the Tarai, with the shortage of water being the most critical factor. The dry period is so hot, and the water table so low, that most trees shed their leaves, giving rise to the drought-deciduous broadleaved forests that once covered these lands. Some trees, like sāl, are never quite leafless, their new leaves emerging in early April when most of the old ones are still falling. This is the time of flowering of many of the forest trees, with large, thick-petaled, scarlet flowers of simal contrasting with the mass of

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small, yellowish-white sāl flowers perfuming the hot airs with their heavy fragrant scent. Sometimes khayar, sisau and sāl form pure stands, but more commonly they are intermixed with a wide array of trees and large shrubs of all ages, forming beautifully varied forests teaming with wildlife and home for many plant species.

Riverine forests provide the most diverse habitats with a great mixture of tall and medium-sized trees, and a dense understory of shrubs and herbs. The make-up of these forests is determined by the quality of the soil and availability of water. In the younger, wetter soils near rivers khayar and sisau predominate, whereas in drier areas towering, buttressed trunks of simal are found, alongside karma (*Haldina cordifolia*), bot dhaiyanro (*Lagerstroemia parviflora*, crepe myrtle), hallunde (*Lannea coromandelica*) and many other trees. Although almost all riverine forest trees are deciduous, there are a few evergreens such as jamun (*Syzygium cumini*), khaksi (*Streblus asper*) and sindure (*Mallotus philippensis*). The conspicuous fruit clusters of sindure are covered in a bright, rusty-red powder which is used for dying cloth and in religious festivals.

In contrast sāl forests are relatively limited in numbers of tree species, often with little in the way of undergrowth, particularly in areas where the canopy is unbroken. Asna (*Terminalia elliptica*) is frequent partner to sāl, its tall straight columns of ash-grey bark, textured like elephant skin, make them stand out from the other, much darker trunks. Two other species of *Terminalia* also grow in sāl forest – barro (*Terminalia bellirica*) and harro (*Terminalia chebula*), both sources of black myrobalan used in tanning and dying. The over-sized juvenile leaves of tantari (*Dillenia pentagyna*) are a distinctive feature of the understory, appearing far too large for the slender saplings to support. Epiphytes and climbers are scarce in sāl forests compared to other forest types in Nepal, but two huge woody vines are a prominent feature of these forests, along with towering termite mounds. Both are members of the legume family, bhorla (*Bauhinia vahlii*) and debre lahara (*Spatholobus parviflorus*), forming twisted, contorted ropes wrapping around and hanging down between trees. Bhorla has twin-lobed, butterfly-like leaves, giving rise to its common names camel's foot climber, and debre lahara has leaves of three large leaflets. In shaded dips and stream gullies in the sāl forests there maybe enough year-round moisture to support true evergreen tropical forest trees. Here jamun thrives, along with dumri (*Ficus racemosa*), dande kanda (*Xylosma longifolia*), and phirphire (*Acer oblongum*).

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Woody vines in sisau forest, clinging to trees to get their leaves beyond the reach of browsing animals and into the light.

Tarai Transformations – Malaria and Migration

These steamy lowland jungles were dangerous places, particularly in the pestilent summer monsoon when mosquitos carried a particularly virulent form of malaria (aul), which only the indigenous Tharu people showed resistance to. Brian Hodgson wrote in 1832 that "*malaria prevails equally and terribly throughout the* [Tarai] *region, from the middle of March to the middle of October ... this pest-house, from which all mankind flee, during 8 months of every 12 ...* [else] *they will catch malaria and die. There are particular tribes of men bred in these or similar places (such as the Thárû ...) who can live there, at least, if not flourish.*" These malarial forests were a natural deterrent to people wanting to enter Nepal, and so they helped keep the country isolated from foreign influence, particularly the British. The Rana rulers, and the Shah's before them, deliberately maintained these thick forests, prohibiting habitation and cultivation in some areas, and restricting hunting to the ruling elite.

Population levels in the Tarai were historically low, with the threat of malaria keeping outsiders away. Things changed in the late 1950s when the eradication of malaria

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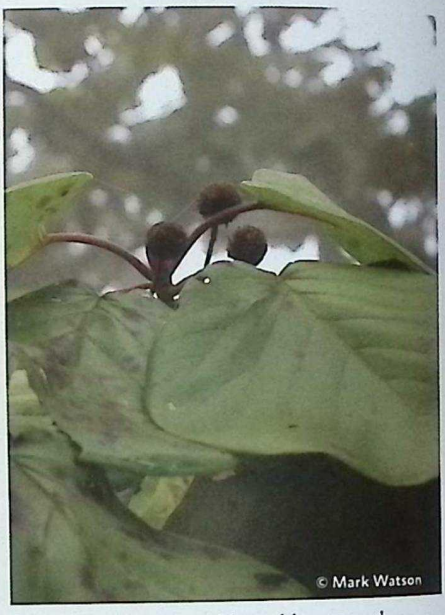
Contorted stems of ancient bhorla vines add to the unearthly atmosphere of jungle walks in misty winter mornings.



Round seed heads and broad leaves make karma trees easily recognisable.

resulted in a great influx of people from the hills, and from neighbouring parts of India, eager to settle and acquire these virgin forests, converting them into fertile farmland and hunting the wild animals. This had the disastrous effect of rapidly accelerating deforestation, as the hard, durable sāl timber has always been highly valued for construction and intricated carving. The temples and stately buildings of the Kathmandu valley use sāl as the principle timber, with legends recording that Kastamandup was built from one enormous sāl tree. After the 2015 earthquake sāl timbers shored up vulnerable buildings in Kathmandu, as they continue to do so today, and the wood fetches high prices with increasing demands for post-earthquake reconstruction of historic buildings. Sāl leaves have a long tradition of collection and sale in markets for making leaf plates and bowls held together with thin slivers of bamboo, the ultimate in biodegradable tableware. The heaviest losses of forest cover were in the 1970s and 80s, reaching a peak in the middle of the 90s, and today there is very little left of the extensive sāl forests of the past. Within the Greater Lumbini Area, natural sāl forest has been reduced to a narrow strip along the northern fringes. These forests are on the Bhabar, the free-draining alluvial fan zone which gently slopes down from the southern flanks of the Churia hills

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Termite mound under large-leaved tantari trees in mixed sal forest.

Mile-a-minute *Mikania* blankets the vegetation of forest margins, reducing food availability for rhinos.

to the plains. Although the Bhabar has higher rainfall than the Tarai, water is in very short supply and the land difficult to cultivate. Today it is mostly managed as community forests by a variety of Forest User Groups.

Fire and invasions

With the arrival of people came the use of fire to manage the land. Fire, the second elemental of nature to have a profound impact on the landscape of the Tarai, had always been a threat as lightning strikes during springtime electric storms can ignite the tinder-dry vegetation. These natural events are sporadic, but the fires that people started deliberately were systematic, extensive and much more destructive. The Tharu communities practiced shifting cultivation on the elevated river terraces, growing rice and mustard for two or three years, before clearing new land for growing their crops. The old land was used for pasture or reverted to tall *Imperata* and *Themeda* grasslands, with fire used to stop the encroachment of trees and shrubs, and to maintain tender shoots for their grazing animals. Several species of grass are still used by the local people for house construction, basketry or matting, and once these

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Livestock are important for local farmers, but overgrazing reduces forest regeneration and encourages growth of banmara and other unpalatable invasive plants.

are cut what is left is burnt every year in March and April. By then the vegetation is dry and burns quickly, the flames reducing the above ground parts to ash whilst leaving the roots and seeds unharmed in the soil. It's not long before green shoots grow up through the charred remains, and the grasslands spring back into life. However, fire kills young trees and shrubs, and so this annual burning stops the natural succession of grassland into forest. Although this is only intended to control grasslands, fire often penetrates into the riverine forest and even gets into the more distant sāl forests, causing widespread destruction. These fires usually do not burn hot enough to kill mature trees, but young saplings, shrubs and herbs perish in the flames, stopping the natural regeneration of the forests and destroying the undergrowth. Today the riverine forests are also often used for grazing, the trees selectively cut and vegetation burned to create large areas of savannah-like open forests in these otherwise closed ecosystems.

Man has been responsible for another major impact Nepal's native vegetation – the introduction of pests and diseases, and especially invasive alien plants. One of these

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high profile invaders is *Mikania micrantha*, the mile-a-minute vine, which has taken over the riverine forests of Chitwan, blanketing trees and shrubs, and smothering everything in its path. This vigorous creeper is native to subtropical America, and was introduced accidentally in the mid 20th century. Two other problematic invaders are *Chromoleana (Eupatorium) odoratum* and *Lantana camara*, also from the Americas, the latter brought in as a garden ornamental shrub, before finding ideal growing conditions in cultivated lands and disturbed forests where it forms dense masses, muscling out native plants, and preventing the regeneration of trees. These are commonly called ban mara, or forest killers, with just reason. Open water and marshes are also becoming choked with invasive alien plants, notably water hyacinth (*Eicchornia crassipes*) from Amazonia, and *Ipomoea carnea* from Brazil which also blocks irrigation channels. These are a particular problem in Jagadishpur Reservoir, an internationally recognised Raamsar wetlands site, where invasive plants are adversely affecting bird populations, and causing the some wetland areas to dry out. Recent years have seen a rise in problems caused by pests and diseases, such as Dalbergia Dieback, as the impacts of climate change are increasing their spread and control measures are having only limited effect.

The Lumbini Garden

During the life of Gautama Buddha the Lumbini area would have been sparsely populated, with cultivation limited to small fields of cleared land near settlements. Villages were few and far between, and were mostly fortified near, or within, palace townships such as Kapilavastu and Devadaha. Although kingdoms came and went, cultivation continued at a relatively modest scale for two millennia. Much of what we know of historical Lumbini comes from Buddhist literature, accounts of pilgrims and other visitors, and archaeological evidence. Buddhist texts recount that King Suprabuddha Grihapati created a special place for his pregnant daughter Maya in the sāl forests (salvana) near the village of Lumbini, midway between her husband's household as chief of the Shakya clan in their capital Kapilavastu (Tilaurakot) and his, as chief of the Koliyans, in Devadaha. When travelling to her childhood home in anticipation of the birth, Queen Mayadevi was entranced by this grove and asked for her attendants to carry her into the forest to enjoy the scene. This was in spring when the sāl was in full flower, and the grove (or garden) was said to be a mass of scented flowers and fruits, the air buzzing with swarms of bees and full of song from flocks of birds. She wandered through the trees and approached the

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Tall grasslands and wetlands are a haven for wildlife, abounding in birds, tigers, rhinos and crocodiles.

greatest (monarch) sāl tree, where she took hold of a branch and delivered her child – Prince Siddhartha Gautama. Later accounts blend the earthly with the celestial, portraying trees richly adorned with gold, glittering gems, precious jewels, and multicoloured silks. Flowers were said to be planted as in the gardens of the gods, the ground strewn with godly flowers and anointed with perfume. Some compare it to Chittalata grove of Indra's paradise in heaven.

This pleasure grove amongst the sāl trees soon became known as a sacred place, with visitors planting trees and shrubs to beautify the area and enhance its sanctity. In time it was transformed from a woodland grove to a beautiful ornamental garden with ashok trees (*Saroca indica*), mango and peepal (*Ficus religiosa*). Ownership of the Lumbini Garden (Lumbinikanan) was shared between the people of Kapilavastu and Devadaha, and maintained jointly by the Shakyas and Koliyans. Some plants would have religious significance, as they continue to do so today, and would have been blessed, preserved and replaced. But as centuries passed, knowledge of the Lumbini Garden faded from memory, and it became completely abandoned sometime after the 14th century, and was swallowed up by the jungle.

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Controlled burning of grasslands in winter promotes new growth for grazing animals, and stops the establishment of trees.

The nativity tree

Many people consider sāl to be the tree that Mayadevi held onto whilst giving birth to Gautama Buddha, and that is consistent with the story of a newly created grove in a natural sāl forest. However, although Buddhist texts refer to a grove, or garden, in a sāl forest, they differ in the tree grasped, sometimes mentioning sāl, ashok or plaksha (*Ficus lacor*, kabhro). Literature accounts of the visit by the Indian emperor Asoka in 3rd century BCE say that he was shown an ashok tree, and the famous Chinese pilgrims of the 4th, 5th and 7th centuries, Zhi Seng-zai, Fa Xian and Xuan Zang, all refer to ashok as the tree under which Buddha was born. The ancient tree they saw having been propagated by cuttings, perpetuated and venerated, but by the time of Xuan Zang the tree was still in place but dead. These later visits were nine centuries or more after the birth, and so many if not most of the original trees would have perished and been replaced, either by natural regeneration or by the planting of more ornamental trees. Stone sculptures of the nativity dating back to the 3rd century also depict a tree in the birth scene, but some identify this as sāl whilst others interpret it as ashok. The identity of the nativity tree may never

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The central canal in Lumbini looking north to the Peace Pagoda, the avenue of trees planted either side is mostly kadam.

be known with certainty, with both sāl and ashok being strong contenders. The identity has become further clouded over time, with mango, jamun, plaksha, and banyan (*Ficus benghalensis*) also implicated. Another complication is the pillar-like false ashok tree (*Polyalthia longifolia*), which is sometimes confusingly called ashok. However, this commonly planted street tree can be discounted as it is native to SE Asia and only relatively recently introduced into Nepal.

Trees in the Kenzo Tange Master Plan

Throughout his life Guatama Buddha had strong connections with trees and forests. He was born under a tree, and spent six years as a young man wandering through forests before he attained enlightenment under a bodhi tree (pipal) in Bodhgaya. For most of the rest of his life (45 years) he wandered through forests teaching the dharma, giving his first sermon under a tree. He was said to have slept under a nim tree (*Azadirachta indica*, neem) when he was ill, and he died under a pair of sāl trees in Kushinara. It is not surprising that trees are an important component of Kenzo Tange's Master plan for Lumbini, providing shelter, a peaceful environment,

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Un-natural serried ranks of a monoculture planting of sal in Lumbini. The trees are all the same age with no regeneration of young trees or ground flora.

inspiration and shielding the sacred area from external influences. Notions of tranquillity, universality and clarity permeate the Master Plan, with emphasis on developing a pristine, natural environment with sanctity, peace, and harmony.

According to the Kenzo Tange Master Plan the Sacred Garden symbolises enlightenment, creating an atmosphere of calm and tranquillity, any plantings must be of the highest quality of design. The Inner Sacred Garden is to be predominantly a grassy area, encircled by a circular levee enclosing an artificial pond. This is the most spiritual and archaeologically important area, and plantings should be restricted to herbs and small shrubs whose roots are not deep enough to disturb any archaeological remains beneath the soil. The Inner Sacred Garden is to be separated from the outside world by water and forests, which offer protection and shield the birthplace from external developments. The Outer Sacred Garden was defined in Master Plan as a wooded area, to be planted by native trees. At the start the whole Lumbini area was devoid of natural forest, and so extensive planting was needed. Unfortunately the Outer Secret Garden area was neglected, and many non-native trees and shrubs were planted. At present this area is not used for any particular

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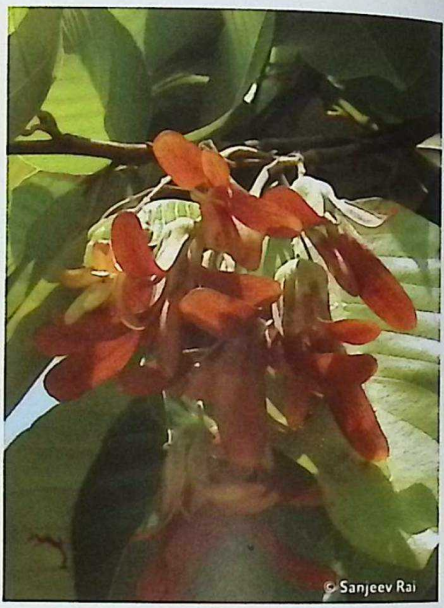
Fleshy red petals and nectar-rich, scentless flowers of simal attract the birds that pollinate them.



Winged, 'helicopter', fruit of a sal tree slows their fall and helps transport the seed away from the mother tree.

purpose and there is a great opportunity for redevelopment, removing these exotics and creating a mixed forest of native Tarai trees. This would create the authentic and appropriate environment envisaged by Kenzo Tange, and provide serene areas for meditation and other activities currently undertaken in the Inner Sacred Garden.

At the other end of the development is an area set aside for accommodating pilgrims and visitors. The Lumbini Village zone now also includes the World Peace Pagoda and an area of grassland designated as a sanctuary for Sarus cranes. Separated from the rest of the site by the Taulihawa – Bhairahawa highway, this entranceway is intended to represent worldly life, and the point where visitors leave behind their daily experiences and embark on a journey into the spiritual world. The atmosphere is to change from the mundane to the sacred, grading from an artificial world into natural landscape. The Cultural Centre symbolises the understanding of knowledge, where people can learn about the early life of the Buddha, and his life experiences on his path to enlightenment. Visitors then travel south down the central canal, passing through the Monastic Zone, gaining insight into the life of religious devotees. The canal was intended to have a row of tall sāl trees either side to give shade, but kadam

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(*Neolamarckia cadamba*) has been planted instead. Forests around the edges of these areas separate them from the outside world, the whole environment is designed to mentally and physically prepare visitors for entering the Sacred Garden.

Tree planting in Lumbini

Forest plantations extend over 40% of the Lumbini site, with grasslands covering the remaining areas. The circular pond in the Sacred Garden is the main waterbody, but the two major rivers (Harhawa River and Telar Nadi) flow through the site during the summer monsoon creating many small ponds and marshy areas, which are also home to aquatic and water-loving plants. 370,000 sapling trees were planted in the early years of the Lumbini Development Project, the vast majority (about 295,000) being sisau, in largely monoculture blocks. Other native trees that were planted at this time included sāl, jamun, khayar, nim, kadam and mango. Exotic trees were also planted, such as teak (*Tectona grandis*), lemon-scented gum (*Eucalyptus citriodora*), red bottlebrush (*Callistemon citrinus*), and several species of *Albizia*. In 1999 around 190,000 trees remained in the Sacred Garden area, but today this figure will be much lower due to the widespread loss of sisau to the fungal disease Dalbergia Dieback which has run rife in the monoculture plantations. Drainage issues in some forested areas have also killed trees which cannot tolerate their roots being waterlogged.

Early plans for Lumbini included an agricultural buffer zone surrounding the whole site, comprising open fields for normal agricultural use and groves of trees. This was intended to create a link between the sacred site and the local population, and provide plant resources they could use, but this was not implemented. Local people have now penetrated the perimeter wall, regularly bringing in their animals to graze in the forests, and illegally cutting trees for fodder and firewood, even along the central axis and other public areas. This not only reduces the beauty and serenity of Lumbini, but also compromises the natural growth of young trees, and increases the spread of invasive plants, further degrading the forests.

Visions of the future

Gardens are traditionally places of relaxation and contemplation, giving rest for the mind and body. As Lumbini is one of the most sacred places in the world,

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it is fitting that it should be surrounded by a beautiful, world-class garden. The Lumbini area could also be a significant place to develop as a natural landscape with indigenous plants, improving and protecting the natural environment, whilst conserving the historic landscape and biodiversity of the Tarai. There is great potential for conservation, biological research, education and demonstration, showing the close links that plants have with people, cultures and religions. However, unmanaged rapid urban and industrial development is taking its toll on what biodiversity remains in Lumbini. These developments need to be balanced with the conservation of nature and the development of Lumbini as an international spiritual centre. A living landscape master plan is needed to direct these developments, to sit alongside the Kenzo Tange Master Plan, and fulfil the original vision for Lumbini.

We must take a long-term view for the conservation of biodiversity and the restoration of habitats. Lumbini can be a haven for wildlife, a stepping stone between Chitwan and Bardiya, but only if natural habitats can be created and maintained. Forests are a key element, but trees take a long time to grow, and ecologically diverse, mature forests take even longer to develop. The early phase of tree planting in Lumbini was limited by what saplings were available at the time and what was easy to grow, hence the lack of diversity of indigenous species. Many more tree species will be needed to recreate sāl and riverine forests, and a good way of doing this would be to set up a nursery in Lumbini to grow trees from seed and nurture the young plants. Seeds could be sourced from ancient trees in Tilaurakot, and other historic sites in the Greater Lumbini Area, so providing a living link back to Gautama Buddha, whilst also preserving the genetic diversity of these mother trees. Specialists in horticulture and forestry will need to work together to establish germination and cultivation protocols, to set up the nursery, and to train local people in caring for these plants. This nursery will need long-term investment, but could form part of an education garden where visitors can learn about indigenous plants of the Lumbini area, and those sacred in Buddhism and other religions. This education garden would be well-placed within the Cultural Centre. It should aspire to the highest international standards of horticulture, design and interpretation, and be accessible to all with wheelchair-friendly paths. The visitor experience in the whole Lumbini area could also be enhanced through interpreted nature trails winding through the restored landscapes.

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Sal tree in full flower, as Gautam Buddha's mother would have seen at the time of his birth.

Fallen winged fruits of asna, scattered on a dry river bed in a sal forest.

Conservation and the sustainable use of natural resources can only be achieved with the participation and engagement of the local people who live in the surrounding communities. Authorities need to work with local groups to promote the appropriate use of Lumbini, and share the benefits from the conservation of Lumbini and the surrounding area. Ideally the cutting of trees and grazing by animals should be stopped or at least confined to areas well away from public view. But local people need to be given alternatives for these plant resources which they need for their livelihoods. Many visitors also share the view that improving the physical environment by planting indigenous trees in mixed assemblages (not monocultures) will help develop Lumbini in a sustainable way, and that increasing forests and greenspace will help reduce pollution, provide habitats for wild animals, and enhance its use for meditation. A great deal of resources have gone into developing the built environment in Lumbini, and some of this has been at the expense of the living landscape. There is an urgent need to redress the balance, to stop further degradation of the natural environment, and prioritise the establishment of indigenous forests and other habitats for the benefit of all.

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Plants mentioned in the text

Local name	Devanagri	English name	Botanical name	Life form
khayar	खयर	cutch	*Acacia catechu*	Tree
phirphire	फिरफिरे	Himalayan maple	*Acer oblongum*	Tree
nim	नीम	neem	*Azadirachta indica*	Tree
simal	सिमल	silk cotton tree	*Bombax ceiba*	Tree
kalki phool	कल्की पुल	red bottlebrush	*Callistemon citrinus*	Exotic
seto banmara	सेतो बनमारा	Siam weed	*Chromoleana odorata*	Invasive
sisau	सिसौ	Indian redwood	*Dalbergia sissoo*	Tree
tantari	टाँटरी	Nepalese elephant apple	*Dillenia pentagyna*	Tree
datingal	दतिन्गल	ivory wood	*Ehretia laevis*	Tree
jalakumbhi	जलकुम्भी	water hyacinth	*Eicchornia crassipes*	Invasive
masala	मसला	lemon-scented gum	*Eucalyptus citriodora*	Exotic
bar	बर	banyan	*Ficus benghalensis*	Tree
kabhro (plaksha)	काभ्रो (पलाक्शा)		*Ficus lacor*	Tree
dumri	डुम्री	cluster fig	*Ficus racemosa*	Tree
pipal	पिपल	sacred fig	*Ficus religiosa*	Tree
karma	कर्मा	yellow teak	*Haldina cordifolia*	Tree
sanai phul	सनई फूल	pink morning glory	*Ipomoea carnea*	Invasive
bot dhaiyanro	बोट धंयरो	crape myrtle	*Lagerstroemia parviflora*	Tree
hallunde	हललुडे	Indian ash tree	*Lannea coromandelica*	Tree
kirne kanda	किर्ने काँडा	lantana	*Lantana camara*	Invasive
sindure	सिन्दुरे	red kamala	*Mallotus philippensis*	Tree
aanp	आँप	mango	*Mangifera indica*	Tree
lahare banmara	लहरे बनमारा	mile-a-minute vine	*Mikania micrantha*	Invasive
kadam	कदम	burflower tree	*Neolamarckia cadamba*	Tree
bhorla	भोर्ला	camel's foot climber	*Phanera vahlii*	Vine
khote salla	खोटे सल्ला	chir pine	*Pinus roxburghii*	Tree
nakkali ashok	नक्कली अशोक	false ashok	*Polyalthia longifolia*	Tree
kans	काँस	wild sugarcane	*Saccharum spontaneum*	Grass
ashok	अशोक	ashok tree	*Saraca indica*	Tree
sāl	साल	sal	*Shorea robusta*	Tree
debre lahara	देब्रे लहरा	palas climber	*Spatholobus parviflorus*	Vine
khaksi	खाक्सी	Siamese rough bush	*Streblus asper*	Tree
jamun	जामुन	Java plum	*Syzygium cumini*	Tree
sagwan	सागवान	teak	*Tectona grandis*	Exotic
barro	बर्रो	bastard myrobalan	*Terminalia bellirica*	Tree
harro	हर्रो	black myrobalan	*Terminalia chebula*	Tree
asna	असना	Indian laurel	*Terminalia elliptica*	Tree
gamari (bhelur)	गमारी		*Trevia nudiflora*	Tree
dande kanda	डाँडे काँडा	lemon wood	*Xylosma longifolia*	Tree

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Birds and wildlife of the Lumbini Area

Hem Sagar Baral

Lumbini – a Haven for Wildlife

Visiting a world-famous cultural centre like Lumbini, the birth place of Lord Buddha, we often overlook the other aspects of its rich heritage, such as its wildlife. The Greater Lumbini Area not only includes important UNESCO World Heritage Sites, one formally designated and two on the Tentative List, but it is also the richest rural landscape in Nepal in terms of birds and other wildlife. The biodiversity of this landscape could be the richest in the world. Lumbini is teeming with wildlife and, considering it is not within the formal network of protected areas or protected forests, its rich natural heritage parallels that seen in Nepal's National Parks. In fact, more wild animals are recorded from here than in many protected areas of Nepal, especially those in the mid hills and the highlands.

Although dominated by traditionally cultivated rural farmland, this landscape is a complex mosaic of semi-natural and natural habitats which are home to a wide diversity of wildlife. Tall grasslands and narrow bands of forests line the meandering, perennial rivers, linking a network of scattered wetlands. Fragments of woodland, old and new, are found throughout the southern parts of Lumbini, and patches

Cattle egret, a bird that enjoys a free ride on the back of livestock and feeds on insects disturbed by the cattle.

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Farmlands of Lumbini. Note the charateristic wide bunds with grass tussocks that are most useful for wildlife.

of natural sal (*Shorea robusta*) forest span the northern rim. This 'farmscape' is unique in Nepal, and contains several of the country's Special Conservation Sites (SCS). A recent study on the natural history of the farmscape around Lumbini has highlighted the area as important for biodiversity, and much of the information on wild animals presented here is extracted from this work. To date 421 species of birds, 39 mammals, 61 amphibians and reptiles, and 58 fishes have been reliably recorded from the Greater Lumbini Area. The majority of the smaller forms of animal life are poorly known, however, a staggering 105 species of butterfly have been listed for Lumbini.

Birds of Lumbini

Lumbini is famous for both farmland and wetland birds, with over 420 species recorded. The tables at the end of this chapter detail some of the more important bird species and their conservation status.

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Jagadishpur Reservoir, the most important Ramsar Site for birds in Nepal.

Wetland Birds

Many species of wetland birds are found in and around Jagadishpur Reservoir, Gaidahawa Lake, the several rivers flowing across the landscape, and, most recently, also the Sacred Ponds around the birth place of Lord Buddha. To mention a few, the strikingly beautiful Red-crested Pochard, globally threatened Common Pochard, smallest of the ducks and resident Cotton Pygmy-goose, the Brahminy Ducks or Ruddy Shelducks, the Northern Pintails and Shovelers, drab-plumaged wintering Gadwalls and Indian Spot-billed Duck, the chocolate dripped Ferruginous Ducks, the Mallards, and the ubiquitous Lesser Whistling Duck. All are common sights in Lumbini, especially during winter months. The other duck-like waterfowl which abound in the area include numerous Eurasian Coot and Common Moorhen (the sight of which is reminiscent of ponds in European city parks), the strikingly colourful Purple Swamphen, cormorants, and the Oriental Darter with the snake-like movement of its neck. The unmistakable Pheasant-tailed Jacana and Bronze-

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Common Pochard, a globally threatened species regularly sighted at Jagadishpur Reservoir.

winged Jacana have spectacular plumage and exceptionally long toes which enable them to defy gravity and walk on floating lotus leaves.

In all the senses of the word Lumbini is a haven for the large waders: the storks, ibises and cranes. All of Nepal's eight species of storks are recorded here, notably the globally threatened Lesser Adjutant, our largest resident stork. It is not unusual to see more than a dozen of these huge, five-foot-tall birds feeding in the farmlands and wetlands, or sometimes perched on a tree. Lesser Adjutants nest in simal (*Bombax ceiba*) and karma (karam, *Haldina cordifolia*), and Lumbini is one of the most important areas for their conservation in the entire world. Another stork that is common here is the Asian Openbill, which nest colonially, with Lumbini having the largest population in Nepal. They usually nest in simal trees, and some measures have been carried out to protect them, especially in the programme of Special Conservation Sites. Lumbini, with many nesting colonies of Asian Openbill, acts as the source population of this species, which not only spreads

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Indian Roller, a fairly common farmland bird that shows dramatic flashes of blue during flight.

Greater Coucal, a ground cuckoo which, unlike its cousins, has not forgotten to build its own nest.

to other districts of Nepal, but also into India. The Asian Woollyneck is another important species of stork that can be frequently seen here. This has been found breeding in Rupandehi District and is expected to be found breeding in other districts of the Greater Lumbini Area. Due to a recent taxonomic reassessment by BirdLife International this bird has been reclassified and now treated as a separate species, distinct from its African cousin. This division has resulted in the Asian Woollyneck now being listed as Vulnerable by IUCN (International Union for Conservation of Nature). Black Ibis, Black-headed (White) Ibis and most, if not all, species of egrets, bitterns and herons are found in Lumbini. While Black Ibis breeds in Lumbini, the status of Black-headed Ibis is not known. In recent years, increasing numbers of this species have been sighted in Kapilvastu District, especially around the Jagadishpur Reservoir.

The majestic Sarus Crane has become a symbol of Lumbini, and is a flagship species for conservation in this region. With a height exceeding five feet, and a

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Yellow-wattled Lapwing, the rarer of the lapwings in the Lumbini farmscape.

wingspan of nearly nine feet, it is the world's tallest flying bird. The crane has an elegant stature, vivid colouration, penetrating beagle-like voice, and enchanting mating dance. Sarus is a resident breeding species in Lumbini and in a few other parts of lowland Nepal. Two other migratory cranes, the Common Crane and Demoiselle Crane, have also been recorded in the Greater Lumbini Area, both of which are rare winter visitors elsewhere in Nepal. Sarus is one of the nine species of birds strictly protected by law in Nepal. Historically, Sarus Cranes occurred within Nepal's protected areas, but the lack of favourable management regimes has resulted in loss and degradation of suitable habitats in these designated areas, and therefore decline in crane numbers. The major threats to this species are habitat loss through development and degradation, nest disturbance during breeding time, egg stealing, poaching, and mortality associated with high voltage power lines. There are an estimated 500 Sarus Cranes in the Nepal, of which more than 80% are found in the Greater Lumbini Area. Lumbini seems to be the last refuge for these magnificent birds.

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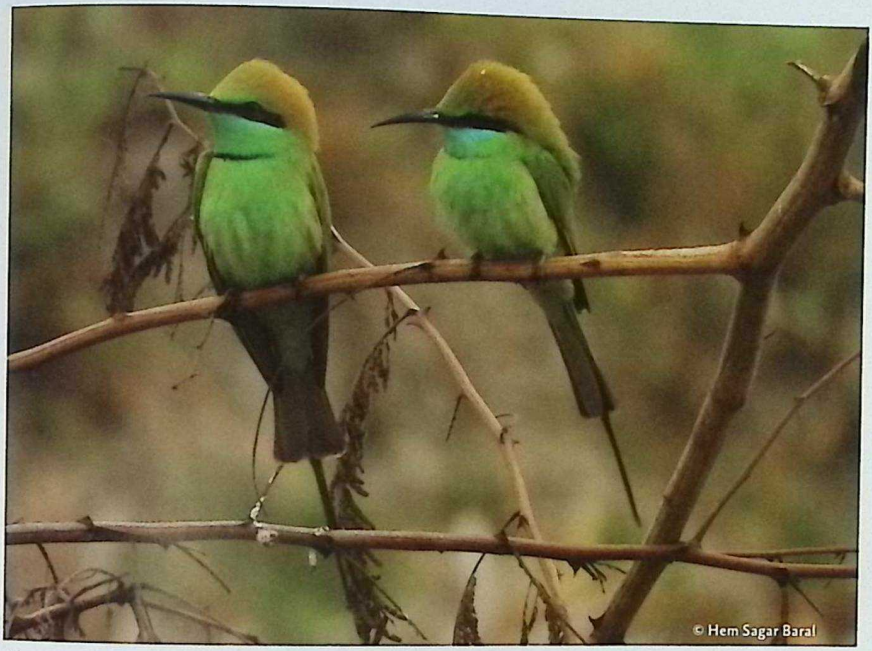

Green Bee-eaters, one of the most colourful birds that take insects on the wing.

Birds of Prey

Another important group of birds of the Lumbini area in need of particular mention are the birds of prey. Lumbini is teeming with birds of prey, large and small, especially those that frequent the open countryside. Most of Nepal's species of Aquila (large eagles) have been recorded here, including the Steppe, Greater Spotted, Indian Spotted, Imperial, Tawny and Bonelli's Eagles. The Steppe Eagle is a fairly common eagle in Lumbini, but it is facing widespread global decline with IUCN listing it as Endangered. All other eagles are also globally threatened with the exception of Bonelli's –but these are still listed, under the lower category of Vulnerable. Indian Spotted Eagle is the only large eagle that breeds in Lumbini, and is an important indicator of the health of our farmlands and wetlands.

At least seven of Nepal's nine species of vultures have been recorded in Lumbini, but all vultures have faced a dramatic decline in recent years due to secondary

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poisoning by diclofenac. This was once commonly used in Nepal and India as an anti-inflammatory drug for livestock, but it is easily transferred to vultures when they feed on abandoned carcasses, usually with fatal results. Many vulture species have seen catastrophic falls in numbers since the 1990s, especially the White-rumped and Slender-billed Vultures, which still nest in small forested areas north of Kapilvastu District. Both species are critically threatened, with population declines of more than 90% within the last 15-20 years. Black-winged Kites are regularly seen perched on power transmission lines, and sometimes hovering over farmlands looking for prey. On the positive side, the somewhat larger Black Kites are increasing in numbers.

Night bird of prey, for example owls, are of equal importance for Lumbini. Here is the only place in the lowlands where Rock Eagle Owl and Barn Owl can be regularly sighted. During winter, one can also witness Short-eared Owl, the only owl of Nepal that visits us regularly at that time. Other colourful avian denizens of Lumbini include the four common varieties of brightly coloured kingfishers and four Bee-eaters. The Indian Rollers are often seen perched on road-side power lines, and various kinds of green parakeets fly around in large flocks. Visitors occasionally see glimpses of the colourful resident Black-hooded Orioles, or summer migrants Indian Golden Orioles, both predominantly yellow and black. Rufous Treepies are a common sight in small patches of woodlands, and smaller chats, larks, pipits, and wagtails also abound.

Mammals of Lumbini

Of all the animals recorded in Lumbini, the Nilgai is perhaps the best known of the large mammals. Although numbers of Nilgai have fluctuated, they are still plentiful and one can see this magnificent creature in open wooded grooves as well as amongst river-side vegetation. Nilgai are easily identified by their large size and tendency to live in small herds. Adult males are larger and blue-grey compared to smaller, brown females. Both sexes have large white patch under their throat, but only males have horns.

Tigers have been reported recently in the northern hill forest areas, but these are extremely rare in the Greater Lumbini Areas. Common Leopard, one of the most handsome, adaptable and widely distributed of the large cats, is also in the Lumbini area, but is rare and occasionally found in the fringes of northern

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Nilgai, the largest wild ungulate of the Greater Lumbini Area

forests. Asiatic Golden Jackal is the medium-sized mammal that visitors are most likely to see, and if they miss it then they will certainly hear its night-time howling. Jackals move in pairs, or small groups, and can be found throughout the Greater Lumbini Area.

Most other mammals are small-sized, such as the Jungle Cat which lives happily in the grasslands and farmlands. This wild cat is slightly larger, and more strongly built, compared to our domestic cats. Indian Grey Mongoose, the famous cobra-fighter, is also here. They move mostly in pairs and sometimes in small family parties. Mongoose help control rodents and snake populations, but are opportunistic carnivores and will also eat birds. They are fairly common in Lumbini as they are so adaptable. Five-striped Palm Squirrel is another small mammal that one might see around places of worship. These squirrels are quite used to of the protection of holy sites, and happy to collect scraps of food which devotees have offered to the gods during religious ceremonies (*poojas*).

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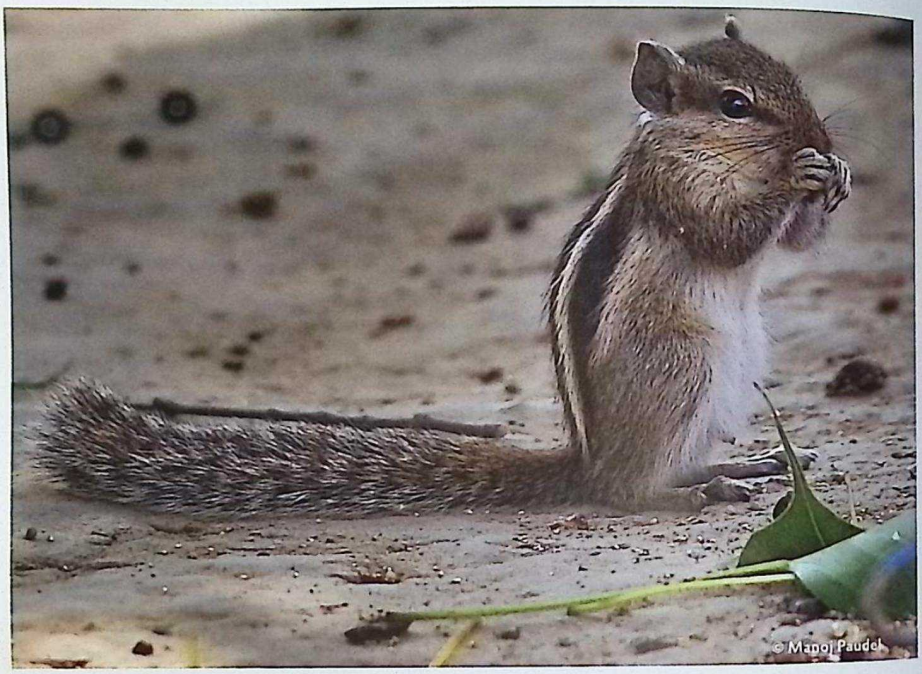

Five-striped Palm Squirrel feeds on left over grains from offerings made during religious ceremonies.

Many species of bats are found in Lumbini, but the one that people always remember is the large Indian Flying Fox. This is one of the largest bat species in the world and is a nocturnal feeder. There are at least three places around Lumbini where they are known to roost during the day, one in Kapilvastu and two in Rupandehi. They hang upside down, clutching onto high branches by their feet, their leathery wings enveloping their bodies. It's hard to imagine that these large skin folds on their forearms enable them to fly as if they are birds, but of course they are mammals! One is almost certain to see flying foxes in these locations, which are termed as Special Conservation Sites for their biodiversity value. Away from their roosts, Flying Foxes are known to visit small orchards and woodlands with fruiting trees, so keep an ear open at night to listen for them fluttering over the fruit trees. Flying Foxes also like to feed on the flowers and fruits of kadam trees (*Neolamarckia cadamba*), of which there are plenty in Lumbini. Most other bat species can be identified when in hand or at roost, but such opportunities are only possible with a local naturalist as a guide.

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Indian Grey Mongoose's curious look

Lumbini – global importance for wildlife conservation

BirdLife International has designated the farmlands around Lumbini as an Important Bird and Biodiversity Area (IBA), of which there are 37 in Nepal. Many of us perceive national parks and protected areas as sanctuaries where birds and wild animals thrive, however, Lumbini is one of the most important IBAs that remains outside Nepal's protected area network. All IBAs are automatically Key Biodiversity Areas (KBAs), a much wider concept initiated by Conservation International and later endorsed by IUCN, highlighting sites of very high biodiversity with global significance. IUCN is the world's largest network of conservation stakeholders, both NGOs and governments, and has a powerful mandate for conservation. IUCN's recognition of KBAs is now widely used as the mechanism to identify biodiversity-rich areas and prioritise them for conservation. Similarly, the Ramsar Convention recognises wetland areas of outstanding international importance. Jagadishpur Reservoir, near Tilaurikot, has been designated as one of Nepal's 10 Ramsar Sites, further signifying the value of

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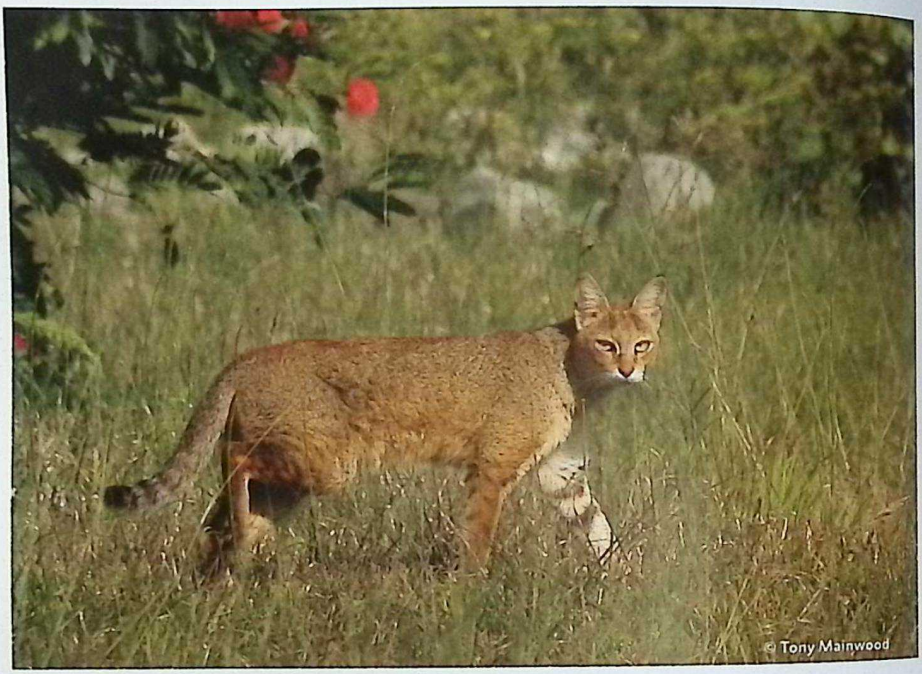

A Jungle Cat prowls through semi-natural habitat looking for food

Lumbini in the conservation of flora and fauna. Jagadishpur is now Nepal's most important wetland for water bird conservation, with over 20,000 birds recorded for the last four years. The multiple designations by these internationally credible organisations sets the Greater Lumbini Area amongst world's most important sites for biodiversity conservation, and places a duty of care on the people of Nepal and the Nepalese Government.

Threats to the Wildlife of Lumbini

The traditional rural landscape is rapidly being lost, and with this the loss of rural habitats and the wildlife they support. Unchecked human population growth and unplanned urbanisation are the biggest threats to birds and other wildlife of the Lumbini area. Changes in agriculture practice, the shift from subsistence to commercial farming, and the excessive use of agro-chemicals, also have a huge impact on wildlife. Lethal poisoning either directly from chemical poisoning or

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indirectly through secondary intake (e.g. vultures and diclofenac) occurs with alarming frequency. Human infrastructure is disturbing bird migrations and the natural movement of wildlife across the landscape. High voltage power lines, airports, expressways, communication towers, unplanned viewing towers and other large structures, all have significant negative impact. Pollution also takes its toll on wildlife, as it does on the people that live in and visit Lumbini. There are already significant problems of poor air quality, solid and liquid waste, polluted water supplies and pesticide residues, with little sign that this will be reversed. Another man-induced change is the rise in prevalence of Invasive Alien Plants, especially *Mikania micrantha* and *Parthenium hysterophorus*, which out compete native plants and alter habitats so they no longer support indigenous plants and wildlife. The spread of these invasive plants has been accelerated by climate change, and this global phenomenon is also leading to low water levels in the rivers, and the drying of lakes and ponds.

Recommendations for Wildlife Conservation in Lumbini

1. Lumbini Development Trust should bring together all stakeholders and government bodies to coordinate and manage conservation, natural and cultural, economic development, wetland management, agriculture, etc. The farmscape of the Greater Lumbini Area should be declared as a special conservation and peace zone: Buddha taught compassion and no killing, including of wild animals, ahimsa should be observed.

2. The historically important ancient sites in the Lumbini area should have buffer zones of natural/semi-natural vegetation. Land classification, with differential taxation (e.g. land for development and land for agriculture), must ensure unchecked and unplanned development. Development work on biodiversity hotspots e.g. Jagadishpur Reservoir, Dano river floodplains may destroy the overall value of the sites. Therefore, such activities should be carried out following advice from experienced experts on environment and biodiversity. The highest standards of environmental mitigation and adaptation must be followed while carrying out construction projects. Maintain walking/bicycle lanes on all major roads.

3. Streamline industries in the Bhairahawa-Nawalparasi corridor away from Ramagrama. Remove heavy and polluting industries phase-wise from the

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A flock of Sarus gathering at Jagadishpur wetlands prior to their breeding season.

Bhairahawa-Taulihawa corridor. Ensure that no industries discharging pollution operate in the Taulihawa area, as it harbours a denser concentration of ancient cultural sites. Minimize and reduce pollution and ensure all the industries comply with environmental rules and regulations. Encourage corporate social responsibility in the business sector to uplift livelihoods and for nurturing nature around Lumbini. All high-voltage power cables and communication lines should be put underground.

4. Ensure transboundary cooperation with India, including safeguarding these sites of ancient natural heritage. Minimizing air pollution on the Indian side of the border will benefit Lumbini. Reduce pollution from solid waste, make Lumbini a polythene bag free zone, reduce noise pollution, water pollution, and ground pollution. Ensure only electric vehicles are allowed within the Lumbini Master Plan area, and encourage the same elsewhere in the archaeological sites within the Greater Lumbini Area.

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5. Government subsidy for agriculture could be used not only for the benefit of farmers, but also farmland wildlife. Farmers should be provided with better access to the market, especially those practicing organic and no pollution farming – eco-friendly farming. All farmers should be encouraged and made aware of environment friendly agriculture schemes and profitable, sustainable and healthy way of farming practice.

6. Encourage local governments/NGOs to maintain fallow land/wetlands as habitats for wildlife in the land area they own. Maintain a diversity of ponds, marshes, and wetlands. Ensure that not only the areas around the wetlands but their main sources and flow are safeguarded. In this regard, watershed conservation, water use and rights, and minimum flow should be ensured. Establish river corridors and trails along major rivers and streams. Riverine vegetation should be protected through the participation and stewardship of farmers/landowners/local activists/civil society organizations or NGOs with local government/state government leading.

7. Promote research and awareness in all areas of the Greater Lumbini Area and share the findings with general public as well as policymakers, not only specialists. The area west of Banganga River up to Krishnanagar remains relatively poorly explored, extending north to the East-West Highway. Recognize IBA/KBAs as a tool for site conservation, adopt SCS and the Satoyama Initiative at the local level.

8. Promote tourism and diversify it into different forms: cultural, natural, agriculture.

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Birds assessed as Critically Endangered on National Level

Baer's Pochard	*Aythya baeri*
Black-bellied Tern	*Sterna acuticauda*
Black-necked Stork	*Ephippiorhynchus asiaticus*
Blue Quail	*Coturnix chinensis*
Brahminy Kite	*Haliastur indus*
Caspian Tern	*Sterna caspia*
Dusky Eagle Owl	*Bubo coromandus*
Eastern Grass Owl	*Tyto longimembris*
Eastern Imperial Eagle	*Aquila heliaca*
Eurasian Curlew	*Numenius arquata*
Eurasian Spoonbill	*Platalea leucorodia*
Falcated Duck	*Anas falcata*
Great Grey Shrike	*Lanius excubitor*
Grey-headed Fish Eagle	*Icthyophaga ichthyaetus*
Gull-billed Tern	*Sterna nilotica*
Laggar Falcon	*Falco jugger*
Lesser Fish Eagle	*Icthyophaga humilis*
Montagu's Harrier	*Circus pygargus*
Oriental Hobby	*Falco severus*
Pale-headed Woodpecker	*Gecinulus grantia*
Pallas's Fish Eagle	*Haliaeetus leucoryphus*
River Tern	*Sterna aurantia*
Rufous-bellied Eagle	*Lophotriorchis kienerii*
Slender-billed Vulture	*Gyps tenuirostris*
Spot-billed Pelican	*Pelecanus philippensis*
Striated Grassbird	*Megalurus palustris*
Tawny Fish Owl	*Ketupa flavipes*
Vernal Hanging Parrot	*Loriculus vernalis*
White-browed Piculet	*Sasia ochracea*
White-rumped Vulture	*Gyps bengalensis*
White-tailed Eagle	*Haliaeetus albicilla*
Yellow-breasted Bunting	*Emberiza aureola*

Birds assessed as Endangered on National Level

Black Bittern	*Dupetor flavicollis*
Cinereous Vulture	*Aegypius monachus*
Great Bittern	*Botaurus stellaris*
Great Hornbill	*Buceros bicornis*
Great Slaty Woodpecker	*Mulleripicus pulverulentus*
Indian Courser	*Cursorius coromandelicus*
Indian Nightjar	*Caprimulgus asiaticus*
Knob-billed Duck	*Sarkidiornis melanotos*
Northern Pintail	*Anas acuta*
Painted Stork	*Mycteria leucocephala*
Red-headed Vulture	*Sarcogyps calvus*
Red-necked Falcon	*Falco chicquera*
Saker Falcon	*Falco cherrug*

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Slaty-legged Crake	*Rallina eurizonoides*
Spot-bellied Eagle Owl	*Bubo nipalensis*
Thick-billed Green Pigeon	*Treron curvirostra*
White-throated Bushchat	*Saxicola insignis*

Birds assessed as Vulnerable on National Level

Asian Openbill	*Anastomus oscitans*
Baillon's Crake	*Porzana pusilla*
Barn Owl	*Tyto alba*
Barred Cuckoo Dove	*Macropygia unchall*
Black Stork	*Ciconia nigra*
Black-breasted Weaver	*Ploceus bengalensis*
Black-faced Bunting	*Emberiza spodocephala*
Black-headed Bunting	*Emberiza melanocephala*
Black-headed Gull	*Larus ridibundus*
Bristled Grassbird	*Chaetornis striata*
Brown Fish Owl	*Ketupa zeylonensis*
Brown Wood Owl	*Strix leptogrammica*
Brown-headed Gull	*Larus brunnicephalus*
Common Babbler	*Turdoides caudata*
Cotton Pygmy-goose	*Nettapus coromandelianus*
Demoiselle Crane	*Grus virgo*
Egyptian Vulture	*Neophron percnopterus*
Ferruginous Duck	*Aythya nyroca*
Garganey	*Anas querquedula*
Golden Eagle	*Aquila chrysaetos*
Greater Spotted Eagle	*Aquila clanga*
Grey Francolin	*Francolinus pondicerianus*
Himalayan Vulture	*Gyps himalayensis*
Hooded Pitta	*Pitta sordida*
Hume's Bush Warbler	*Cettia brunnescens*
Indian Spotted Eagle	*Aquila hastata*
Lesser Adjutant	*Leptoptilos javanicus*
Little Bunting	*Emberiza pusilla*
Little Tern	*Sterna albifrons*
Northern Harrier	*Circus cyaneus*
Pale-footed Bush Warbler	*Cettia pallidipes*
Pallid Harrier	*Circus macrourus*
Pheasant-tailed Jacana	*Hydrophasianus chirurgus*
Pied Harrier	*Circus melanoleucos*
Red-breasted Parakeet	*Psittacula alexandri*
Rock Eagle Owl	*Bubo bengalensis*
Sarus Crane	*Grus antigone*
Short-eared Owl	*Asio flammeus*
Steppe Eagle	*Aquila nipalensis*
Western Marsh Harrier	*Circus aeruginosus*
Yellow-wattled Lapwing	*Vanellus malabaricus*

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Birds assessed as Near Threatened on National Level

Alexandrine Parakeet	*Psittacula eupatria*
Ashy-headed Green Pigeon	*Treron phayrei*
Asian Woollyneck	*Ciconia episcopus*
Bar-headed Goose	*Anser indicus*
Baya Weaver	*Ploceus philippinus*
Black Baza	*Aviceda leuphotes*
Black-headed Ibis	*Threskiornis melanocephalus*
Black-tailed Godwit	*Limosa limosa*
Chestnut-winged Cuckoo	*Clamator coromandus*
Clamorous Reed Warbler	*Acrocephalus stentoreus*
Collared Falconet	*Microhierax caerulescens*
Common Crane	*Grus grus*
Common Pochard	*Aythya ferina*
Common Tern	*Sterna hirundo*
Crested Lark	*Galerida cristata*
Golden-headed Cisticola	*Cisticola exilis*
Great Cormorant	*Phalacrocorax carbo*
Greylag Goose	*Anser anser*
Indian Peafowl	*Pavo cristatus*
Large-tailed Nightjar	*Caprimulgus macrurus*
Lesser Kestrel	*Falco naumanni*
Lesser Sand Plover	*Charadrius mongolus*
Northern Lapwing	*Vanellus vanellus*
Oriental Darter	*Anhinga melanogaster*
Oriental Pied Hornbill	*Anthracoceros albirostris*
Oriental Pratincole	*Glareola maldivarum*
Pacific Golden Plover	*Pluvialis fulva*
Pin-tailed Green Pigeon	*Treron apicauda*
Plain Martin	*Riparia paludicola*
Red Avadavat	*Amandava amandava*
River Lapwing	*Vanellus duvaucelii*
Ruddy Shelduck	*Tadorna ferruginea*
Savanna Nightjar	*Caprimulgus affinis*
Small Buttonquail	*Turnix sylvaticus*
Small Pratincole	*Glareola lactea*
Spot-billed Duck	*Anas poecilorhyncha*
Watercock	*Gallicrex cinerea*
White-rumped Spinetail	*Zoonavena sylvatica*
White-tailed Stonechat	*Saxicola leucurus*
White-throated Munia	*Lonchura malabarica*
Yellow-bellied Prinia	*Prinia flaviventris*
Yellow-eyed Babbler	*Chrysomma sinense*
Yellow-legged Buttonquail	*Turnix tanki*

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Saving the Sarus
Preserving the Lumbini Crane Sanctuary

Lillian Ball

"Compassionate and constructive interventions produce a ripple of beneficial actions that reverberate throughout the universe. By the same token, damaging one strand of the net sets off a cascade effect." The Metaphor of Indra's Net

Culture is inextricably bound to the environment in Nepal. Natural resources that can be sustainably harvested are disappearing nearly as fast as the people who are skilled in their traditional use.

Habitat for humans and wildlife alike is undergoing a vast transformation. The need for a sustainable approach to restoration and revitalization of areas challenged by rapid climate and social change is urgent in wetland areas worldwide. It is even more crucial in a place like Lumbini, which has so many rich layers of nature and culture that can be taken care of or risk being lost forever.

During my first trip to Nepal after the earthquake in 2015, I was introduced to a young Lumbini born Theravada monk and activist, Venerable Metteyya. When he

Sarus cranes in the circular pond next to the Sacred Garden

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A Sarus guards its nest against predators

heard about my ongoing work with wetlands, he told me about his lifelong history of involvement with the threatened Sarus cranes at the Lumbini Crane Sanctuary near the Sacred Garden where the Buddha was born. These are the tallest flying birds in the world: striking with their bright read heads, they still inhabit the rice fields around Lumbini and several pairs annually nest in the Sanctuary.

He also told me the popular story of how Buddha rescued a crane and nursed it back to health after his cousin Devadatta shot it with an arrow. Devadatta claimed the bird but Siddhartha Gautama (the Buddha's name before enlightenment) insisted he had rescued the bird and therefore was entitled to it. The elder judges of the area who were called in to decide the case ruled in Siddhartha's favor, wisely stating "The right to life belongs to those who seek not to destroy it but to preserve it." Therefore, Sarus cranes are a piece of living history and a wonderful illustration of Buddhist Dharma. They can demonstrate it in in a meaningful way, elucidating

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A Sarus crane at the Lumbini Crane Sanctuary

both the lessons of conservation and the teachings of the Buddha, who was born under a tree, enlightened under a tree, and died under a tree.

As a child, Venerable Metteyya learned about the world's 15 species of cranes from George Archibald, the co-founder of the International Crane Foundation and Rajendra Suwal, a wildlife biologist then working for ICF. It was through their efforts that the Lumbini Crane Sanctuary land was officially leased for 50 years by the ICF in the 90's. But as the years went by, the ICF shifted its focus to the Sarus crane population in India and the Sanctuary became considered abandoned land. Of course, for wildlife purposes the Sanctuary is excellent habitat with only minimal interventions.

We are currently designing a basic nature trail and sustainable educational center to attract visitors to learn about how wildlife conservation can be done in this

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New Lumbini Crane Sanctuary sign designed by Lillian Ball

ancient land. George Archibald and the ICF are also back, involved again and very concerned about the fate of the Sanctuary.

Working with a number of groups across a broad span of disciplines has resulted in partnerships with several organizations to preserve the Crane Sanctuary and its habitat: Lumbini Social Service Foundation, Green Youth Lumbini, UNESCO, International Crane Foundation, World Wildlife Fund, Natural Resource Development Centre, Nepali Knotcraft, Animal Nepal, and Canadian Engaged Buddhists. All these interactions demonstrate that collaboration is integral in the fight for conservation.

"Your sangha—family, friends, and copractitioners—is the soil, and you are the seed. No matter how vigorous the seed is, if the soil does not provide nourishment, your seed will die." Thich Naht Hahn

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Environmental destruction affects human as well as wildlife habitat. This Southern Terai area where Lumbini is located already suffers from very serious air and water pollution. When the three square miles around the birthplace were planned as a Protected Site in the 1970's, several villages were uprooted. The local population is as endangered as the cranes by this push for development.

Lumbini is rapidly growing into an international pilgrimage tourist zone, causing stress to diverse natural resources. For most of his life, Venerable Metteyya has been observing these changes and has developed multilayered plans for the conservation of Lumbini's environment as well as long-term programs benefitting its people, such as schools and hospitals. His Lumbini Social Service Foundation (LSSF), works in many sectors, particularly facilitating clinics for both humans and animals, neither of which have nearby healthcare.

In addition to paying the yearly lease and employing two men as stewards and data collectors for the 256-acre Crane Sanctuary, LSFF does public environmental outreach for the area's students as well as maintaining a girl's college and a grammar school. These projects go far beyond western concepts of Engaged Buddhism and are being woven into the fabric of local life.

Joint efforts between Green Lumbini Youth and Metta School student groups now organize clean-ups and competitions to raise awareness. Educational programs are planned along with a nature walk with engaging interpretive signage to acquaint visitors with the environmental perspectives of Buddhism. The resourcefulness of these conservation efforts will reach millions of pilgrims as well as benefiting the local population.

Using the Ramsar Convention's Inventories for Wetlands guidelines, we can focus on creative responses to cultural as well as scientific conditions in Lumbini. Our ultimate long term goal is to make the Sanctuary a sustainable destination for Buddhist pilgrims to learn about wildlife's central position in the historical ecosystem. Fencing is required to keep out cattle herders and the huge water buffaloes that trample nests. Nesting areas that have been bisected by highways need the roads to be closed until the young have fledged.

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Construction underway in the Lumbini Sarus crane habitat

Ideally, we envision a nature walkway with educational interventions which encourage conservation ethics through an experience including wildlife quite similar to what might have been experienced there in Buddha's time.

Recently Venerable Metteyya has been appointed as the vice chairman of the Lumbini Development Trust giving hope for the future. As of this writing, he has already prevented development on the crane sanctuary for the time being. Yet, for the future there is much to be done to protect the cranes and livelihoods in Lumbini.

How can we possibly measure a place's value to its inhabitants? What kind of experience or ethics encourage people towards ecosystem protection and conservation goals? Both the feathered and the local human inhabitants of Lumbini are at risk as *"those who have been made absent by the controlling powers or institutional histories."*
Rupert Sheldrake

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A Sarus scans rice paddies looking for food

The people as well as the wildlife must be considered when making decisions which affect them, they are not simply a part of the landscape. In the eyes of Aldo Leopold, the integrity and stability of ecosystems are beautiful because of their interconnection. This is a concept that many scientists espouse and it is also one of the fundamental teachings of Buddha.

Estella Leopold, environmental activist and Aldo's daughter, does research in paleobotany, the study of fossil pollen as a tool in reconstructing ancient floras. How useful would it be to have knowledge of the plants that graced the wetlands the Sarus inhabited in the Sacred Garden 2600 years ago? It would certainly make the botanical restoration of the wetlands in the sanctuary vastly more specific. But though we have been able to do surveys of birds, fish and wildlife, no such historical flora studies have been attempted in the Sacred Garden to date.

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Lumbini basket weavers make cranes out of local plants

The Lumbini Crane Sanctuary can activate the gap between culture and nature, inspiring opportunities for scientists, artists, contemplatives, and public officials to restore human as well as natural environments. There is a strikingly unrealized potential in making those connections between conservation and wildlife to benefit local people and pilgrims alike.

"A garden is never finished", Shunryu Suzuki

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Sarus cranes with local children in Lumbini.
Film still from Sanctuary

Sanctuary, a film by Lillian Ball, 2018 - sanctuarylumbini.org

Initially, the documentary was shot on an iPhone during conversations with Venerable Metteyya, without realizing it would later become an actual film. It makes links between conservation science, local culture and Buddhist teachings. It advocates for the wildlife and humans of Lumbini, birthplace of the historical Buddha and a UNESCO World Heritage site. Sarus cranes, the tallest flying birds in the world, have lived in the fields around Lumbini since the time Buddha was young. Wildlife species and the local population are pressured by overdevelopment and tourism, which threatens to turn the area into a "Buddhist Disneyland" and build hotels on Sanctuary land. The film depicts Venerable Metteyya's compelling initiative and shines a light on our transdisciplinary work to preserve the unique environment and traditions of Lumbini by protecting the endangered Sarus cranes.

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A cloud over Lumbini

Bhupesh Adhikary, Siva Praveen Puppala, Ayushma Rana,
Samuel Thomas, and Arnico Panday, ICIMOD

The big grey blanket

Every winter since the 1990s, a thick haze covers the Indo-Gangetic Plain including Lumbini. It stretches from northwest India and the adjoining plains of eastern Pakistan, between the Himalayas and the Central Indian Highlands, all along the Ganges River to its delta region and the Bay of Bengal. The haze results from multiple sources of air pollution and is aggravated by temperature inversion, when a layer of cold air is trapped near the surface that prevents air pollutants from rising up.

Air quality has emerged as a significant concern across South Asia in the past decade. A study published in the *American Journal of Climate Change* analyzed trends in aerosol optical depth (AOD) – a measure of the column thickness of haze, concluding that haze over large Indian cities increased at some of the fastest rates in the world between 2002 and 2010, faster even than over the rapidly-growing Chinese cities.

Airplane view over southern Nepal in the dry season:
Haze-covered Tarai on the right and midhills on the left.

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There are several sources of this pollution, including household emissions, industrial and urban pollution, as well as pollutants from seasonal burning of crop residue. The high population density in the Indo-Gangetic Plain is a major factor, with household emissions estimated to contribute as much as 50% of the air pollution. Many cities on the Indo-Gangetic Plains are experiencing rapid growth and industrialization. The emissions from these sources impact health, visibility, ecosystems, agricultural productivity, and climate change. The haze layer over the Indo-Gangetic Plains is often 2-3 km thick during winter time, but has been documented to reach altitudes of 5 km over the high mountains during summer, where it can have potentially significant impacts on glacier and snow cover in the Himalayas, especially through deposits of black carbon, a known climate forcing agent.

Heritage sites in danger

Air pollution can also have major impacts on the integrity of heritage sites and the tourism and pilgrimage economies around these sites. Responding to concerns and public interest litigation over the impacts of pollution on the Taj Mahal, a UNESCO world heritage site, the Supreme Court of India in December 1996 banned the use of coking coal in industries located in the Taj Trapezium Zone (TTZ). The government was asked to ensure that these industries either switched over to natural gas or relocated from the TTZ. The TTZ comprises of 40 protected monuments including three World Heritage Sites – Taj Mahal, Agra Fort and Fatehpur Sikri.

In response to similar concerns around Lumbini, the birthplace of the Buddha and a world heritage site in Nepal, the International Centre for Integrated Mountain Development (ICIMOD) established the Lumbini Air Quality Observatory in collaboration with the Department of Environment and the Lumbini Development Trust in 2016. The objective was to record air quality data to study ambient pollution levels, characterise the pollutants and to clarify the sources for and seasonality of pollution in Lumbini. The observatory continuously measures particulate matter (PM2.5 and PM10), black carbon, gaseous pollutants (ozone, CO, NO_x and SO_2), visibility and meteorological parameters, as well as aerosol optical depth. Initially the observatory was located in the compound of the Lumbini International Research Institute (LIRI) but at the time of writing is being moved to a compound belonging to Lumbini Development Trust (LDT).

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Lumbini Air Quality Observatory. It is based on a modified shipping container, with inlets on the roof and instruments inside.

The sources of pollution

Recent years have seen a rapid increase in the number of industries established in the Bhairahawa–Lumbini corridor, including almost a dozen cement factories as well as steel and other industries. Their impacts on nearby air and water bodies have been well documented by the Department of Environment, contribute significantly to night-time air pollution in Lumbini.

Burning of agricultural biomass residue, or Crop Residue Burning (CRB) has been identified as a major health hazard. In addition to causing exposure to extremely high levels of PM concentration to people in the immediate vicinity, it is also a major regional source of pollution.

CRB gets a lot of attention in the winter months when the pollution spikes in New Delhi, Lahore and other nearby cities. In recent years, the problem has also been reported from Nepal. A study by researchers from ICIMOD and SW Nepal confirmed that many farmers in Rupandehi and adjoining districts practice open agricultural burning especially during October-November, following the harvest of the rice crop

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and in preparation for the planting of wheat. Farmers also burn the residue from the wheat crop after it is harvested in March-April. This study was carried out in three districts – Rupandehi, Kapilvastu and Nawalparasi – which are all big grain producers in Nepal.

The ICIMOD-SW Nepal study concluded that the increasing use of combine harvesters, a shortage of labour, and a shift in livelihoods resulting in fewer livestock, as well as the lack of a market or alternative method of straw disposal, have compelled farmers to adopt the practice of burning straw in the field after harvesting. Our data from the air quality monitoring at Lumbini captures these seasonal spikes in ambient pollution as a result of open agricultural burning. In fact, already in its first year of operation, the Lumbini Air Quality Observatory found that levels of fine particulates (PM2.5) in Lumbini in October were double the levels found in Ratnapark in central Kathmandu.

An earlier study measured ambient concentrations of key air pollutants (PM, BC, CO, O3) in Lumbini in the pre-monsoon season from April–June 2013. It noted that average pollutant concentrations during the monitoring period exceeded WHO guidelines frequently and were comparable with cities like Kanpur and Delhi. During the study period, the worst air pollution episodes were mainly during times of agricultural residue burning and regional forest fires combined with meteorological conditions conducive of pollution transport to Lumbini. Using a model-based approach the study showed that adjacent regions, mostly the Ganges Basin and other parts of India and Nepal accounted for the highest contribution to pollutant concentration in Lumbini (Rupakheti et al, 2017).

The problem is complex and regional. Even the zoning approach adopted in the case of the Taj Mahal, targeting cleaner industrial production, does not address the problem of pollution transport and the background pollution from multiple sources. The Indo-Gangetic Plain has tens of thousands of brick kilns which use the traditional fixed chimney bull's trench kilns for firing bricks, resulting in major pollution. Brick kilns are recognized as one of the largest stationary sources of black carbon, and together with iron and steel production contributes to 20% of global black carbon emissions (CCAC). Access to clean cooking fuels is also limited across the Indo-Gangetic Plain and Nepal, with millions of poor households cooking with solid fuels, contributing significantly to indoor and outdoor air pollution levels.

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The instrument at Lumbini Air Quality Observatory that measures fine particulate matter (PM10 and PM2.5)

Actions for pollution control

ICIMOD has been working on promoting cleaner brick production through its Clean Brick Initiative. This involves a shift from fixed chimney bull's trench kilns to forced draft zig zag kilns, following a design that makes them earthquake-resistant better insulated and with better combustion efficiency, thereby burning less coal, emitting less pollutants as well as less carbon dioxide, while producing better quality bricks. Several kilns in Nepal, Pakistan and Bangladesh have adopted the new technology. In a major policy move, the Government of Pakistan ordered that all existing brick kilns operating on conventional technology to shut down during the smog season between October 2018 and February 2019. Rolling this technology out across the Indo-Gangetic Plain will result in a major reduction in pollutants, contributing significantly to the Nationally Determined Contributions (NDCs) committed by South Asian countries under the United Nations Framework Convention on Climate Change (UNFCCC).

Similarly, in response to the massive spike in pollution in Delhi and the larger National Capital Region (NCR) in India resulting from crop residue burning, the

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A combine harvester machine beginning the rice harvest.
Note the amount of straw it drops back down on the field.

state governments in collaboration with the central government, have rolled out schemes for providing subsidies on mechanical implements that help tillage of soil, so that the residue can be retained in the soil, improving soil organic content and adding to its fertility. However, the high cost of implements means that only a small number of farmers have access to these alternatives at the moment. The rest continue to resort to burning. Burning causes loss of vital nutrients from the topsoil layer, making the land less fertile and unproductive in the long run. Stopping crop residue burning is not only important for mitigating air pollution but also to restore soil health.

A very large fraction of the population of the Indo-Gangetic Plain and the Hindu Kush Himalaya depends on biomass fuel for cooking and heating. Promoting improved cookstoves and access to clean energy for cooking not only addresses the issue of black carbon and other short-lived climate pollutants, it also addresses the problems of indoor air pollution and its health impacts, particularly for women and children. Clean energy and energy efficiency at the household use also has an important gender dimension in an area where women bear a disproportionate

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Tractor ploughing freshly burned fields near Lumbini

burden of provisioning cooking fuels for the household. Similarly, ICIMOD has been promoting the use of Solar Powered Irrigation Pumps (SPIP) across the Nepal Terai in an effort to improve water availabiltiy for irrigation while replacing the use of diesel pumps.

The way forward

It is clear that the high pollution levels in Lumbini are a result of the combined effect of trans-boundary transport of pollutants from the Indo-Gangetic Plain and local industrial and agriculture related pollution. In recent times, a lot of the attention has been focused on the expansion of industries around the heritage site and the burning of crop residue in Rupandehi and the neighbouring districts. Addressing the local sources alone, though, will not be sufficient to provide clean air to Lumbini. That will only be achieved through a concerted multi-country effort to clean up the air across the broader Indo-Gangetic Plains.

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CHAPTER SEVEN

Balancing competing requirements of faith and preservation

Sayalay Bhaddamanika, Basanta Bidari, Lisa Choegyal, Robin Coningham, Christoph Cüppers and Gyanin Rai

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Analysis of visitors

The dual nature of Lumbini as a place of pilgrimage and an archaeological site attracts different types of visitors, including Buddhist pilgrims, non-Buddhist pilgrims, members of resident Buddhist communities and tourists.

Visitors to the inner and outer Sacred Garden carry out numerous activities and they perform these with great reverence to the site, testifying to the value of the World Heritage Property. But these often have an impact on the elements and attributes that constitute the Outstanding Universal Value (OUV) of the site. The various religious communities, the tourists and those who are managing the site, place wide ranging demands on the area. The needs of the visitors must be considered in any planning for the preservation and presentation of the Sacred Garden and they need to be classified, depending on their impact on the Lumbini zone.

The main archaeological artefacts, which are highly revered by visitors, are located in the inner Sacred Garden, where most of the events are concentrated. The outer Sacred Garden surrounding the main site is considered to be a protected area.

Inner Sacred Garden

As Lumbini's most sacred area, the inner Sacred Garden is at the heart of the Kenzo Tange Master Plan and the core zone of the World Heritage Property. It hosts the main pilgrimage structures of high archaeological and religious value and is characterized by a peaceful atmosphere, inspiring a sense of serene faith and tranquility.

Visitors come to Lumbini's core area for many reasons. Among them, the pilgrims represent the most important visitor group. Often wearing distinctive clothes, they pay homage to Lord Buddha by meditating, chanting religious stanzas, reciting holy texts and worshipping the archaeological remains that mark his birthplace. In addition, they conduct prayer programmes on full moon days and other significant religious occasions, and attend monk and novice ordinations. Many bring offerings to the site, some examples of which include lighting butter lamps, candles and incense, offering donations or placing prayer flags around the site. These actions have religious significance but can also have environmental impacts and can disturb the peaceful

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The Sacred pond and remains of ancient stupas

atmosphere, and conflict with the needs of other visitors. Finding the right balance between these aspects of worship is a major planning and management challenge.

Some other actions by visitors have a long-term negative impact on the archaeological values of the site, such as throwing coins at the Asoka Pillar, applying gold leaf to archaeological remains, and splashing milk and chemical based perfumed-water on monuments. Pilgrims are also illicitly taking brick pieces from the monuments, while accessing the place where the Marker Stone has been placed. Other activities have caused environmental pollution of the sacred Pond and of the artificial water bodies around the Sacred Garden.

According to the Kenzo Tange Master Plan, the Sacred Garden should be an area with minimum infrastructure. All modern structures within this area were to be removed and only historically authenticated remains were to be maintained. However, this vision conflicts with the basic requirement of the visitors, such as

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Sunset over the circular pond

the need for toilets, drinking fountains and rest areas. There is also a lack of space to perform religious rituals required by various Buddhist traditions. For example, there are no other images than the Nativity Sculpture presenting Mayadevi with the baby Siddhartha. However, not all Buddhist traditions pray to Mayadevi; some of them pay obeisance to statues of Lord Buddha. Presently, the two monasteries located within the Sacred Garden – the Nepal Buddha Vihar and the Dharma Swami Maharaja Buddha Vihar – provide solace to accommodate some of these religious practices.

Outer Sacred Garden

The outer Sacred Garden functions as a buffer zone of the inner Sacred Garden and is accessed from the north along the central canal, though, other gates located to the west and south can also be used.

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In the outer Sacred Garden, which has not been designed for any specific purpose, there are many things that are of great concern, including fishing by damming rain water drains, poaching endangered animals such as blue bulls and pythons, the illegal trading of endangered bird species, logging, cattle grazing, and the dumping of waste and soil from excavations in various parts of the natural landscape.

The improvement and protection of the area's natural environment, which is largely forested, would create the appropriate setting to surround the birthplace of Lord Buddha. A quiet, clean and harmonious area would greatly enhance and protect the sacredness of the main archaeological site. Good examples of positive action are the tree planting projects and the plantation of flowering shrubs along the eastern access road and along some sections of the circular levee.

The outer Sacred Garden has been neglected in the past and there are no guidelines for its development and use, so it is essential that environmental issues become the concern of all stakeholders, especially the local people who reside in the surrounding communities.For example, regular maintenance is needed for the circular levee road. The outer Sacred Garden must become a bird sanctuary, particularly for endangered species. Trails need to be provided for bird-watching. Regulations need to be enacted to protect avian and aquatic species. Tree planting programmes need to be enhanced. Natural meditation areas could be created in the cool and peaceful wooded areas.

Balancing tourism and preservation

Many of the above issues require a wider tourism planning initiative, taking such issues as access, patterns, and visitor spending into account. In addition to physical amenities, training, guiding and interpretation are also needed. These can be of a scale and style to encourage the involvement of local people and thus contribute to improving their livelihood.

The first principle is that visitor activities must not damage the physical fabric nor compromise the spiritual values, sanctity and integrity of the site. There are many examples across Asia in which tourism and conservation can reinforce each other and are not in conflict. The key is control and management and partnerships amongst the stakeholders. The monastery managers need to be engaged and can play an

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important role in implementing solutions. Likewise, food stalls, local produce, souvenirs and curio shops provide a service for visitors and a means of delivering tourism benefits to the local community. Consequently, they should be properly managed but not stopped.

Regular monitoring of threats to the Outstanding Universal Value and addressing them should be given priority. Clear and effective guidelines for all who travel to the site need to be formulated and implemented.

It is important to balance the competing requirements of faith and conservation. These two aspects can be brought together to lay the foundation for dialogue that gives equal weight to the beliefs and faith of the spiritual community and the interests and needs of conservation. It is important to stress that the use of the site, including by pilgrims, could have a negative impact on both values if it involves alteration of the tangible features that represent those values. Participation by all stakeholders in workshops that strengthen knowledge about the protection of tangible values of the site is an important activity for long-term preservation of the site. The staging of meetings and workshops to raise awareness and provide heritage education about the protection and development of Lumbini will help protect this World Heritage Property.

Some of the visitors' activities that can be categorized as negative are difficult to address as such because they are conducted in the sense of spirituality; however, they can become threats to the archaeological artifacts from a conservation point of view. The immediate surroundings of the Marker Stone are dirty because of the pilgrim's offerings and the presence of mice. The Nativity Sculpture seems to be well preserved, due to the efficacy of the treatments performed last year and the reduced quantity of offerings that have accumulated at the base of the sculpture. The Asoka Pillar is in general well preserved but the inscription is affected by a lightening of the sandstone around some of the letters, while the column shows draining of milk and other liquids in several places.

In order to preserve the OUV of the site, all concerned stakeholders will have to build bridges and work with consideration to accommodate the views of all interested parties. While preserving the ancient monuments, environmental protection of the area also needs to be taken seriously. Since the life of Lord Buddha is very much

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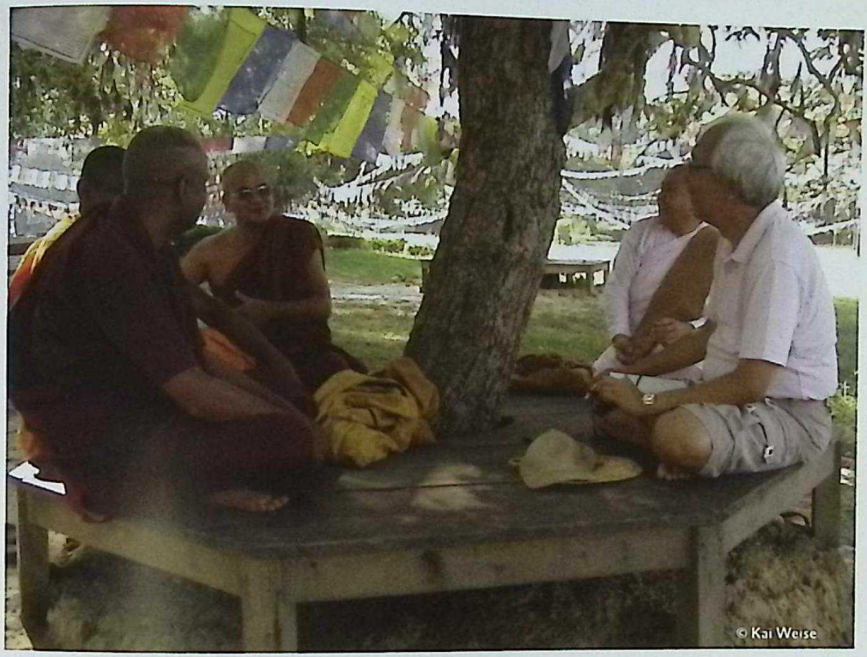

Discourse in the Sacred Garden

connected to nature, it is of utmost importance to address the issues of potential threats to the ecosystem of the site.

What visitors expect from the Sacred Garden

What do pilgrims, tourists, managers, experts and those who visit Lumbini from the surrounding villages, expect from the Sacred Garden? Almost all of these individual or collective expectations are based on some or all of the issues raised in the previous chapters and how these issues are addressed to create a harmonious and sacred place. Lumbini is not only a pilgrimage site for Buddhists but it is also a symbolic place for those who wish to promote peace throughout the world. The site is ideal for practitioners of meditation; fascinating for researchers and journalists; a challenge for architects and conservationists; and a source of livelihood for the local people. They all have different interests in the site, but all expect Lumbini to be developed as a sacred place for those who believe in and are in search of peace

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Under the Bodhi tree

There is however a difference in the way how people feel peace and how they understand a place to be tranquil. Obviously, the reason for their visit to Lumbini determines their expectation. Pilgrims want Lumbini to be a holy place and are satisfied when a place for worship is made available and properly managed. Those who come to Lumbini to meditate seek a suitable place to do so. Visitors such as researchers, journalists and photographers would like to have more information on the historical aspect of the site with more signage and a clean environment.

Several proposals have been made to reduce the negative impact of visitors on the site and to improve the balance between heritage protection and the quality of experience of the pilgrims. They include: regular monitoring of all events in the area; providing information on the excavated archaeological remains; introducing measures to reduce noise pollution; raising visitors' awareness about the need to protect and preserve the environment; and creating serene meditation spots for pilgrims seeking solitude.

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The following statement by one visitor expresses the opinion of many: "Lumbini is an open school, where every visitor, pilgrim, meditation practitioner, tourist, researcher, or someone of any profession can get satisfaction by realizing and experiencing peace." This testimony is one of many collected in 2010, when a series of interviews were carried out to develop a better understanding of what visitors expect when they come to Lumbini.

The interviews aimed at identifying the components that would make the Sacred Garden the peaceful and tranquil place that visitors expect to find when they come. The replies clearly indicate that the main expectation that of the Sacred Garden is that of a place for meditation, spiritual nourishment and contemplation. For all of them, Lumbini with its bearing of ancient history, knowledge, and inspiration is a holy place reflecting the importance as the location where Lord Buddha took his first steps on earth. Most expressed the view that they would like Lumbini to be enhanced with the creation of a natural setting with gardens and large trees spread over the wider surrounding area in the spirit of the Kenzo Tange Master Plan.

The responses also show that many believe that the improvement of the physical setting of the Sacred Garden will help develop Lumbini in a sustainable way. For example, establishing gardens with indigenous plants would not only enhance greenery but also help reduce pollution, provide a habitat for wild animals, offer a suitable environment for meditation practitioners, control noise and protect the Sacred Garden from industrial pollution.

Many visitors also expect better information. The lack of signage systems and information boards, particularly on Lord Buddha's life, is something they feel is needed. Those responding to the survey also expressed concern for the preservation of irreplaceable archaeological remains.

Expectations

The interviewees were asked to explain in one sentence their expectations of the Sacred Garden. Some said they expect the Sacred Garden to be conserved and well managed, including all the archaeological remains and monuments, and that the living traditions should be taken into consideration in this context. The Sacred Garden with its combination of natural, archaeological and ritual elements should

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form a coherent and unified space, said others. Lumbini should be protected as a sacred place with clarity, authenticity and quality. Many agreed that the Kenzo Tange Master Plan should be completed in keeping with its spirit and vision – but with all the necessary 21st century updates.

As stated earlier, the most common expectation was that the Sacred Garden be a quiet, tranquil, beautiful and peaceful place, clean and without pollution. It should be a place of prayer, religious inspiration, faith, meditation, contemplation and reflection, a place of knowledge and learning and for spreading peace throughout the world. These sentiments were expressed over and over, in different ways by those responding to the survey questions.

The interviewees were asked to share their expectations of the visual characteristics of the Sacred Garden and specific actions that could be implemented to better fulfil these expectations. The component most mentioned was the improvement of the gardens. This would include the planting of trees and more greenery overall, particularly of native plants. Most of the remainder of the suggestions were focused on improvement of existing structures and removal of some, as well as improving walkways, providing sufficient toilets and removing the surrounding fencing. In regards to structures, comments were also made encouraging the preservation and uncovering of ancient remains, as opposed to more building. More information–particularly visual–about the birth of Buddha and the time he spent in the area would also be an asset to those who spend time in Lumbini.

Management and Infrastructure

Management concerns by those taking the survey focused on the need to improve facilities, provide more detailed information, and cleanliness. This latter is of major importance, and includes waste management in the Sacred Garden, especially next to the Asoka Pillar, and that the pond be kept clean. There is also a need for adequate crowd control measures to ensure the Sacred Garden is not overly congested at peak pilgrimage times. Those interviewed also expressed the need for archaeological remains to be conserved, further excavations carried out and the essence of Kenzo Tange Master Plan implemented. The ultimate goal of any improvements, visitors felt, would be to ensure Lumbini's status as a place of peace, with an atmosphere conducive to spiritual activities; designated meditation areas were also requested.

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Monks gathering in Lumbini

In summary, the expectations of Lumbini, as expressed by the survey takers, provide a broad image for the Sacred Garden. The site must be peaceful, quiet and harmonious with nature to allow for meditation and contemplation. It must preserve the archaeological testimony to the long history of Lumbini and be presented to visitors in a meaningful manner.

The survey also revealed differences between the expectations of visitors from abroad and those of the people from the local communities. The latter expect that they can carry out their own rituals, partake in general activities and profit from the Sacred Garden and use the space also for recreational activities; if this is to be curtailed, other spaces for them should certainly be provided. The participation of the local communities in the various tasks of ensuring the protection and sanctity of the site is considered by many interviewees as essential. The involvement of the community can and should produce mutual benefits for both the community and Lumbini.

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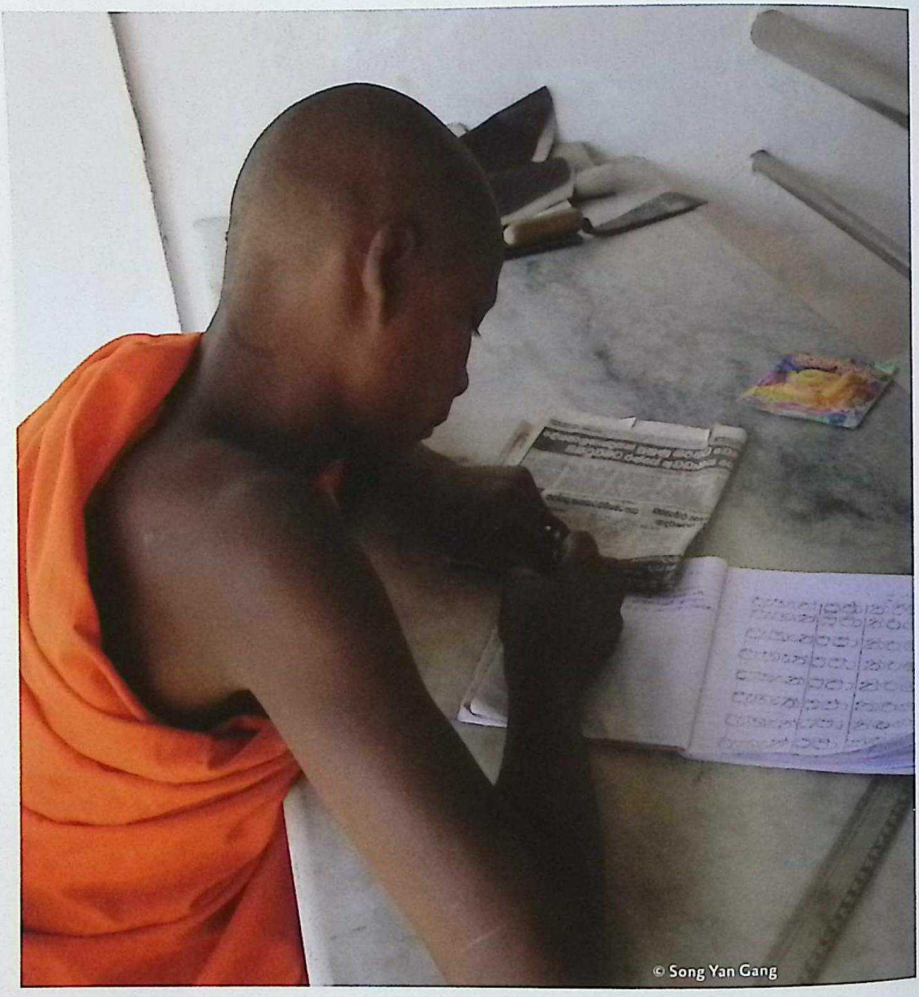

It is encouraging to note that most of the suggestions are eminently doable, and most focus on management and organizational changes that are not overwhelming to implement. Some who visited the site years before and were on a return trip found things have improved for the better; this is a good sign and points to a positive improvement as the area continues to move into the future, while still respecting its sacred past.

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Conclusion: Solutions moving forward

Many international experts' reports, such as those of the joint missions of UNESCO and ICOMOS, state the lack of a vision for the Sacred Garden that would guide all conservation and management policies in Lumbini. This study of the Sacred Garden of Lumbini defines a vision and provides a multifaceted understanding of the area. This book represents the viewpoints and sentiments of a great variety of individuals and communities which have laid stake to Lumbini through its long history. They provide a complex, mosaic-like image of the Sacred Garden of Lumbini and make us better understand how people have seen it through the centuries and what they expect and experience when visiting this sacred place today.

All these points of view, from those of archaeologists, local residents, pilgrims, scholars and everyone in between, contribute to a more comprehensive and inclusive interpretation of Lumbini. However, for the management of the site, a consensus is needed on how to relate and respect the viewpoints and sentiments of the area's many stakeholders. It is this dialogue that will defuse conflicts. Each person that lays claim to Lumbini provides a unique value element to the heritage property. At the same time, each person interested in Lumbini must also accept all others and ensure that all actions and expectations take into account the sustainability of heritage as something of inestimable value that we not only inherit from past generations, but are responsible to preserve for those who come after us. In Lumbini, striking this delicate balance going forward is a challenge that we all must rise to; in this sacred and historical space, it is just that important – for both ourselves and for those who will follow.

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CHAPTER EIGHT

Sites of the Greater Lumbini Area

Robin Coningham, Kosh Prasad Achary,
Mark Manuel and Jennifer Tremblay

The authors would like to acknowledge the contributions of Christopher Davis, Duncan Hale, Ram Bahadur Kunwar, Ian Simpson, Armin Schmidt, Keir Strickland, Anouk LaFortune-Bernard and Basanta Bidari.

The incumbent of the modern Samai Mai Temple at Tilaurakot-Kapilvastu

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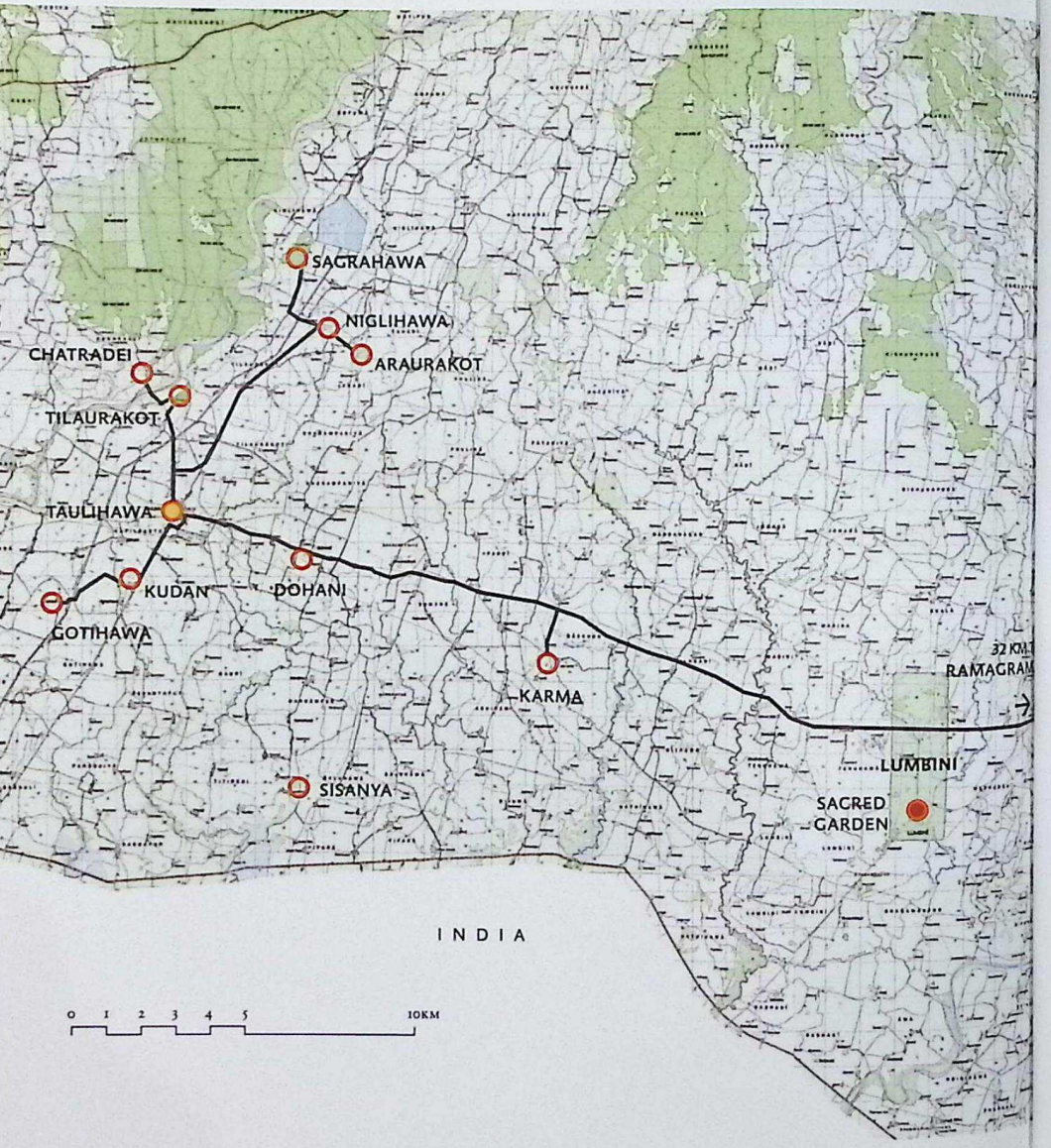

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Introduction to the Greater Lumbini Area

The Greater Lumbini Area (GLA) comprises the three Nepali districts of Rupandehi, Parasi and Kapilabastu, and is centred on the UNESCO World Heritage Site of Lumbini. The GLA contains hundreds of archaeological sites, some of which are directly associated with the life of the Buddha. Key sites include Lumbini, where Lord Buddha was born, Tilaurakot-Kapilavastu, the city in which he spent the first 29 years of his life, and Ramagrama, one of the original eight nirvana stupas which house his ashes. Tilaurakot and Ramagrama are on the tentative list for UNESCO World Heritage Status.

The GLA lies within Nepal's western Terai, a flat alluvial plain bisected by several major rivers. These rivers flow southwards from the Siwalik Hills before eventually merging with the Ganges River. The silts that are deposited by annual floodwaters from the rivers, are what make the region so agriculturally rich, and why people have been drawn to live here for millennia.

Whilst the Terai was the heartland and origin of Buddhism, most of the people currently living in the region are Hindu or Muslim. In the eighteenth and nineteenth centuries, the Terai was sparsely inhabited. The dense forest and jungle acted as an informal buffer between the British Raj and the Hill States to the north. The main population living in the Terai were Tharu.

Local communities practised small scale agriculture, and they developed a natural resistance to malaria. From the mid-nineteenth century the forests of the Terai were slowly cleared for agriculture and industry, and archaeological sites associated with Buddhism were rediscovered. This brief chapter offers an overview of some of the sites most recently studied by a team drawn from the Department of Archaeology (Government of Nepal), Lumbini Development Trust and Durham University's UNESCO Chair.

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The Western Gate In Tilaurakot/Kapilvastu after conservation in the 1960s and 1970s.

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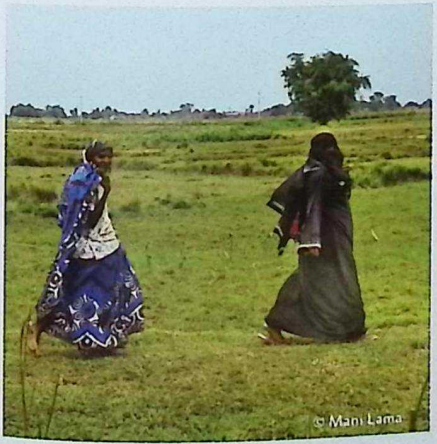
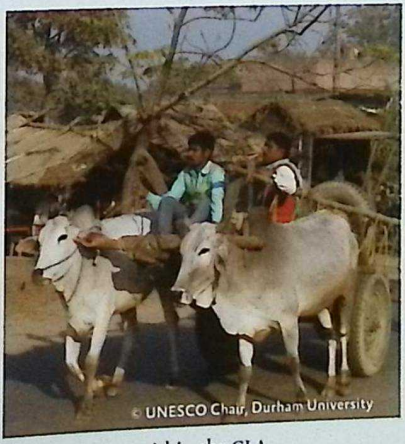
Hindu pilgrims in the Banganga River during a full moon festival.



Most of the current population of the region are Hindu and Muslim.



Transportation within the GLA

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DOHANI

1 The corner bastions provided strength and support to the fort.
2 The archaeological trench identified that the southern rampart was constructed from clay with a brick facing. It was about four metres wide, with a shallow ditch on the outside.
3 The interior of the fort had over two metres of occupation.
4 Auger cores picked up early cultural material, such as proto-Northern Black Polished Ware and Cord Impressed Ware at depths of nearly four metres here. It is possible that this was the site of the early village.

Dohani was first formally investigated through a geophysical survey in 2016 to identify subsurface archaeological features across this low rectangular mound. This revealed the presence of a square cardinally-oriented fort, complete with rounded bastions on each corner. Measuring 50 x 50 m, its fortifications share similarities with other Kushan period (100 BCE – 300 CE) forts in the region, such as Araurakot and Karma. Dohani would have served as a stopping point between Lumbini and settlements to the west.

Excavations and auger-coring in 2017 identified that the fort was constructed with brick faced ramparts of clay on top of an earlier settlement. Possibly dating back to the first millennium BCE, the pottery and material found in the lowest layers of the early settlement at Dohani are very similar to those from Lumbini's Village Mound. Indeed, Dohani may be one of the longest occupied sites in the Greater Lumbini Area. To protect the archaeological remains, the trenches were backfilled following the investigation.

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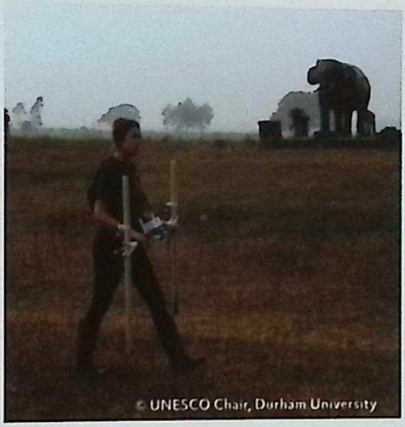
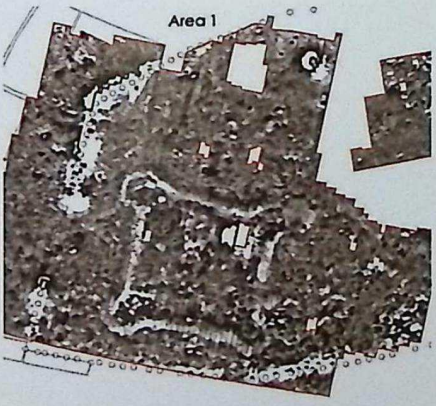
View of the excavation trench showing occupation pits and ceramic vessels.



Geophysical survey of subsurface archaeological features



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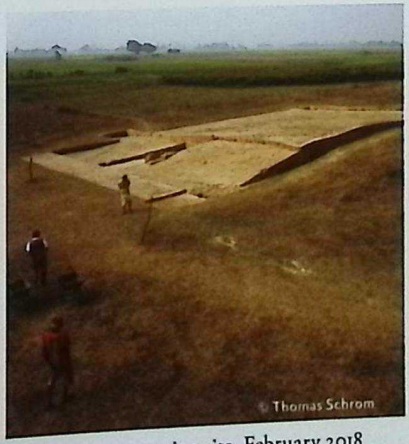
The results of the geophysical survey showing the distinct outline of a square fort below the surface.



View of the excavation site, February 2018

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KARMA

1 The moat encircles the fort, and would have been about two metres deep and four metres wide.
2 The semi-circular bastions at each corner provide additional strength and support. The ramparts are constructed from clay – no brick was found anywhere on the site.
3 The interior of the fort was devoid of any cultural material.
4 The small modern Samai Mai Shrine is present on the northeast bastion.

Karma was first formally surveyed by a team from Durham University between 2016 and 2017 together with the Department of Archaeology. The small fort's layout is almost identical to that of Dohani. The two forts form a direct line between Lumbini and Tilaurakot-Kapilavastu, and were designed as stopping points for pilgrims, officials and traders moving between Lumbini and settlements to the west.

The fort of Karma measures 49.5 x 43.5 metres and has rounded bastions on each corner. The ramparts are nearly two metres high, and the fort was surrounded by a two-metre-deep moat. When a team from Durham University and the DoA extracted auger core samples from across the site, no cultural material was recovered. This suggests that the fort may not have been fully functional after it was constructed and that, unlike Dohani which was built over a pre-existing settlement, the fort may have been founded on virgin land.

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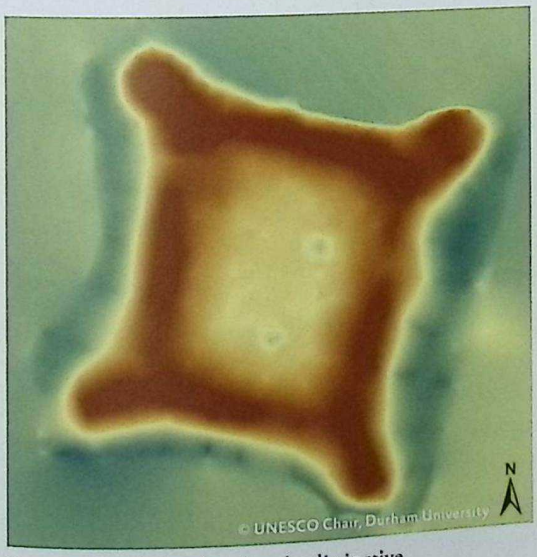
View of the northwest corner bastion, looking southeast



Topographical map showing the distinctive bastions on each corner.

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TILAURAKOT–KAPILAVASTU

Today's Tilaurakot is widely identified as ancient Kapilavastu, the capital of the Sakya kingdom and the city in which the Buddha spent his first 29 years. It was from here that Prince Siddhartha Gautama left on his journey of spiritual enlightenment, renouncing his family and kingdom as he sought to free himself from the cycle of rebirth.

After the city's abandonment, sometime in the first millennium CE, its location and that of many other sites associated with the life of the Buddha were gradually lost. In 1899, the site was re-discovered by P.C. Mukherji, a surveyor of the Archaeological Survey of India, who traced the journey of the seventh century CE Chinese pilgrim Xuanzang to identify Kapilavastu.

The archaeological site of Tilaurakot has been recognised as one of the best preserved ancient cities in South Asia. Radiocarbon dating of excavated charcoal samples and Optically Luminescence Dating of soil samples confirm that the site's origins date back to 800 BCE.

During the twentieth century, the site was investigated several times. Debala Mitra, from the Archaeological Survey of India, excavated across the Northern Rampart in 1962 and the Nepali archaeologists B. K. Rijal and T.N Mishra began to expose more of the city. The structures now referred to as the Central Structural Complex were excavated in collaboration with Rissho University (Japan) between 1967 and 1977.

In 2014, UNESCO initiated a multidisciplinary project for archaeological investigations, conservation and presentation of Tilaurakot-Kapilavastu, jointly implemented with the Department of Archaeology (Government of Nepal), the Lumbini Development Trust, Durham University's UNESCO Chair and the Universities of Stirling, La Trobe and Tribhuvan, and funded by the Government of Japan, through their Funds-in-Trust-for-UNESCO, and a number of other generous donors.

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Aerial view of the Northern Twin Stupas

This project revealed the ancient street grid of the city, and discovered, among others, the remains of a palatial walled complex, a brick water tank and monastic complexes, all along with many archaeological objects. With a view of supporting enhanced visitor and pilgrim experience in the area, visitor surveys were conducted, local tour guides received professional training, bilingual information boards were installed and new walkways constructed.

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1 The Western Gate
2 Shops and Shrines
3 The Central Pond
4 The Northern Rampart
5 The Samai Mai Temple
6 Excavations near the Samai Mai Temple
7 The Central Structural Complex
8 The Central Walled Complex (CWC)
9 CWC - The Northern gate
10 CWC - The Sangharama
11 The Eastern Gate
12 The Eastern Rampart
13 CWC - The Eastern gate
14 CWC - The Southern gate
15 CWC - The Western gate
16 Living in the City

Sites located outside the City:
17 Southern Industrial Zone
18 The Eastern Stupa and Monastery
19 The Northern Twin Stupas

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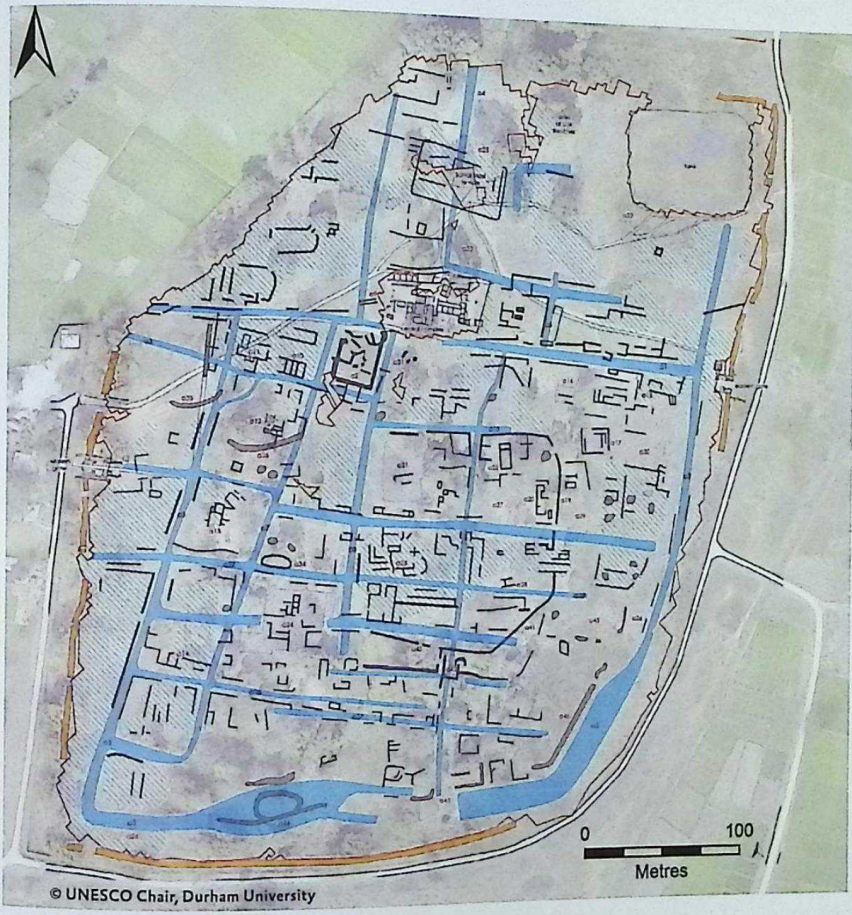

Aerial view of Tilaurakot-Kapilavastu with the results of the geophysical survey overlain. The blue areas indicate streets, lanes and open spaces, whilst the black and grey areas represent buildings, walls and structures. The orange areas are the fortification walls. This layout most likely dates to the Kushan period (first century BCE – third century CE), and is one of the most complete plans of an Early Historic city in South Asia. From the excavations it looks like the grid plan was in place centuries earlier, probably during the lifetime of the Buddha.

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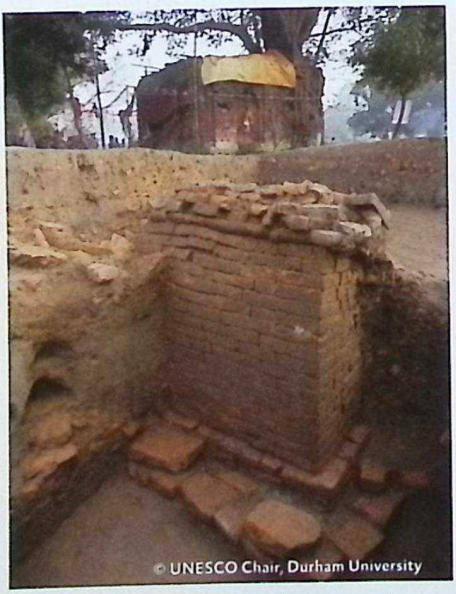
Excavations revealed a series of earlier Gupta-style structures below the modern Samai Mai Temple.



This large wall was excavated in 2018 and shows that a large rectangular platform or structure sits below the present day temple.

Scientific dating of samples taken from the base of this trench suggest that this part of the city was occupied as early as the eighth century BCE.

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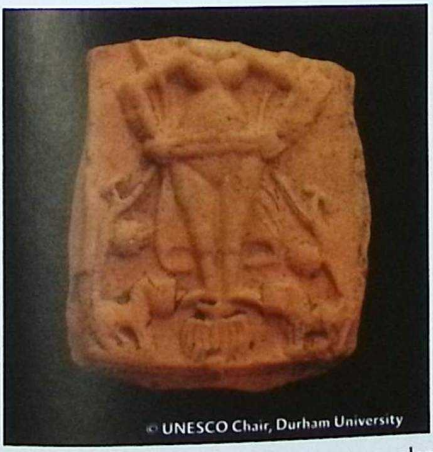
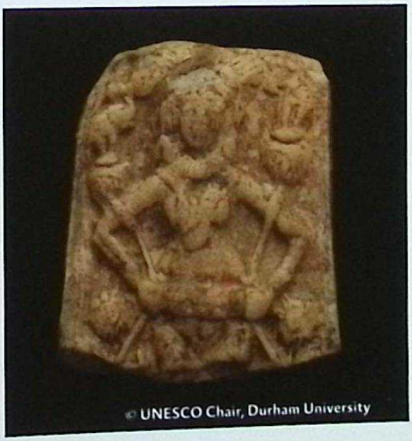
View of entrance to the Central Walled Complex





Sunga period (first centuries CE) terracotta plaques uncovered during excavations of the Northern Rampart.

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View of the conserved Eastern Gate, which was originally excavated by T.N. Mishra.

Series of structural platforms and wall slots which has demonstrated the presence of earlier occupation below the brick structures.

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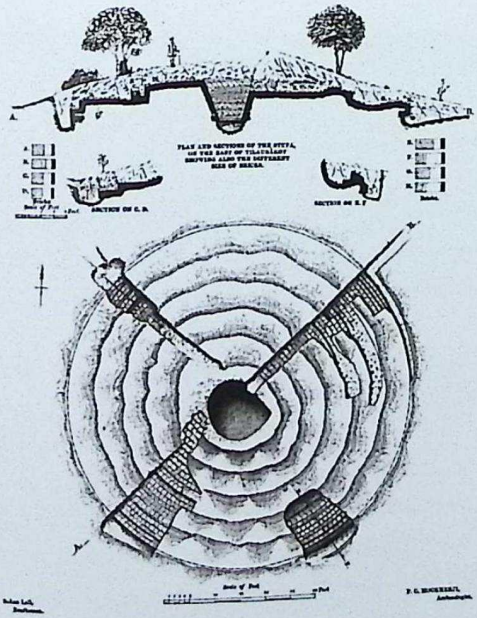
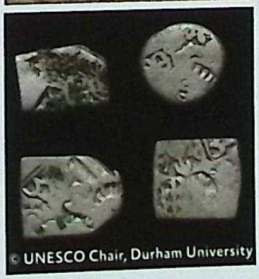
View of the Eastern Stupa, looking south



P.C. Mukherji's plan of the Eastern Stupa in 1899



Hoard of third century BCE silver punch-marked coins discovered at the monastic complex near the stupa.

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CHATRADEI

1 Large mound. This is the location of the cruciform temple exposed by Mukherji.
2 Geophysical survey identified the presence of brick structures buried below the surface.
3 The small mound to the south remains unstudied.

Today Chatradei is densely covered by vegetation and it is difficult to view the central temple mound.

Excavations were first undertaken by the Indian archaeologist P.C. Mukherji in 1899, who suggested that the extensive ruins were most likely contemporary with Tilaurakot. He documented ditches on the north and west sides of the largest mound and a boundary wall to its south. His excavations on the largest of the mounds exposed rectangular buildings decorated with carved brick.

Later research by Debala Mitra of the Archaeological Survey of India in the 1960s suggested that the structures exposed by Mukherji dated to no earlier than the seventh century CE. This was partly due to the complex of cells to the front of the temple platform, an arrangement similar to that of the temples at Kudan, although the presence of carved brick suggests an earlier date. A geophysical survey of subsurface archaeological features in 2016 identified additional structures under cultivated fields to the southeast of the larger mound.

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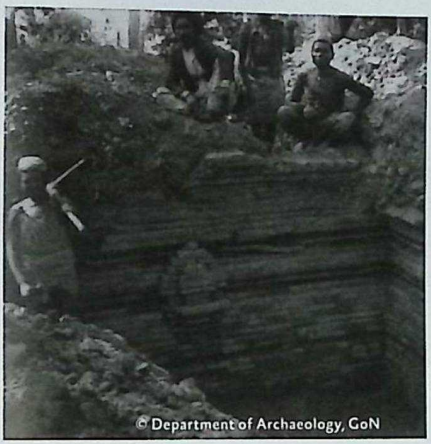
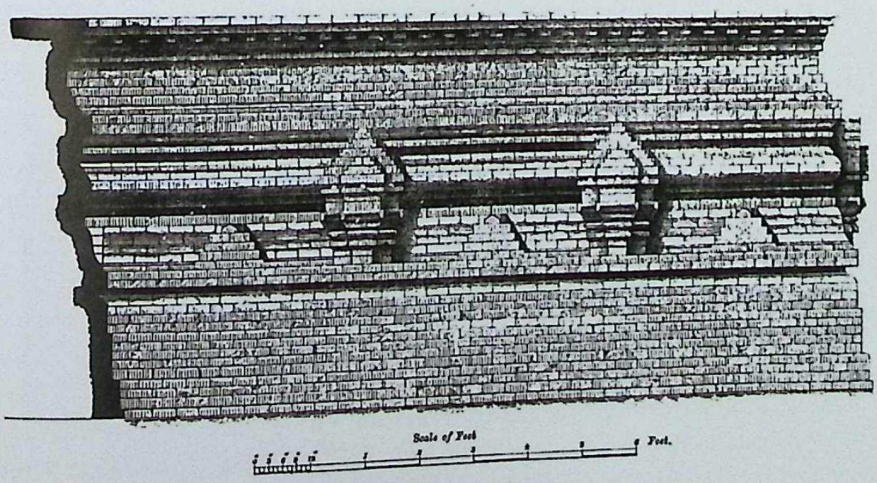


View of the excavations by Mukherji

Auger coring to the south of the main mound



Elevation of one of the faces of the cruciform temple exposed by Mukherji in 1899.

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NIGLIHAWA

1 Niglihawa Pillar with inscriptions from Asoka and King Ripu Malla. It was moved to this location in 1996.
2 Niglisagar Pond where the pillar was found in 1895 by Dr Führer. The inscription was translated in 1896 by Georg Bühler.

The Mauryan Emperor Asoka erected an inscribed pillar in 249 BCE, recording his veneration and enlargement of the nirvana stupa of the Kanakamuni Buddha, one of the 27 Buddhas preceding Lord Buddha.

The Chinese pilgrims Faxian (fifth century CE) and Xuanzang (seventh century CE) also described their visits to the pillar and stupa. Two fragments of the pillar were rediscovered in 1895, the upper portion was half submerged in the bank of the Niglisagar pond, while the lower part of the pillar was partially buried. As the base of the pillar and the plinth on which it once stood are missing, its original location remains unknown.

Some scholars believe that it was erected at the natal town of Kanakamuni Buddha, which Faxian indicates is about one yojana (c. 11–14 km) west from the city of Kapilavastu. However, Xuanzang provides different directions and, thus, the town's location remains unknown. Asoka's pillar also bears a later inscription marking King Ripu Malla's visit in 1312 CE.

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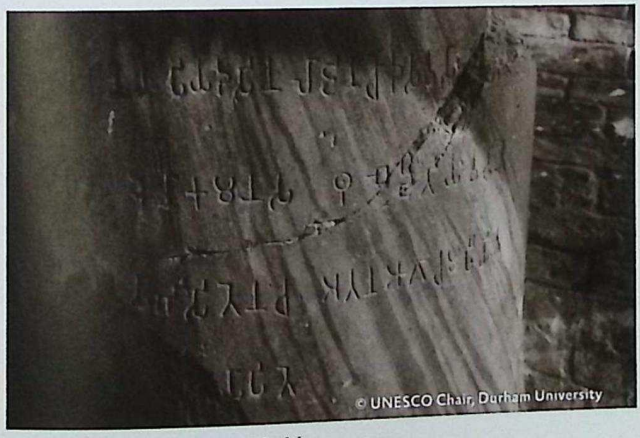
Photographs of Asoka's pillar when it was discovered in 1895 at the side of the Niglisagar Pond (from Mitra 1972).



The Asokan inscription at Niglihawa

"King Piyadasi, beloved of gods, having been anointed 14 years, increased for the second time the stupa of Buddha Konakamana and having been anointed (20 years) he came himself and worshipped (and) caused (this stone pillar to be erected)."

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ARAURAKOT

1 The western rampart was probably constructed from clay dug out of the moat.
2 The southern rampart is faced with brick and has two distinctive stirrup bastions along it.
3 The southwest platform is slightly raised and geophysical survey identified the presence of two structures below the surface.
4 The eastern rampart and gate was constructed from brick with three stirrup bastions.
5 The double moat only survives on this side and represents a significant defensive structure.
6 The northern rampart was constructed from clay.

This fortified enclosure measures 270 x 270 m. The clay ramparts on its south and east are encased in brick, while those on the north and west are lower and unfaced. The brick ramparts are strengthened by stirrup bastions at regular intervals. Circular corner towers and a double moat are to be found on the western side. In 1899 P.C. Mukherji mapped the site for the Archaeological Survey of India. He suggested that the difference in construction materials reflected the fact that Araurakot's enemies were located to the north and west. However, it is equally possible that the site was only partially completed.

The site's morphology bears a striking resemblance to the early first millennium ce military outposts found throughout the Kushan Empire. Although there have been no excavations within the site, a geophysical survey of subsurface archaeological features in 2015 confirmed the different constructions of the ramparts as well as the presence of five stirrup bastions. The survey also revealed that the interior was largely empty, except for a raised platform in the southwest corner with foundations of two buildings. Carved bricks similar to those from Lumbini, Kudan and Tilaurakot have been recovered from the site, suggesting that it was occupied into the middle of the first millennium CE.

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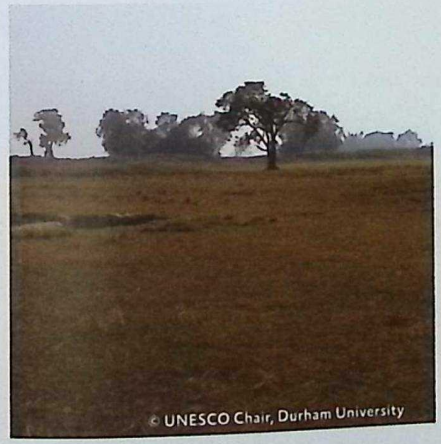
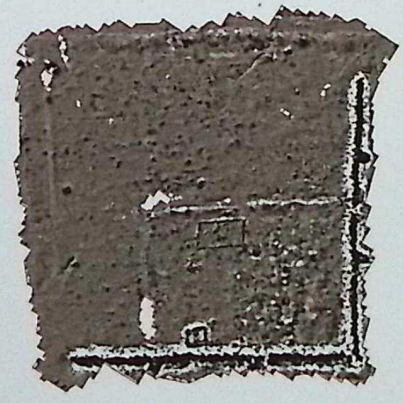
View of a stirrup bastion on the southern rampart



View of the interior of the site, looking southeast



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Results of the geophysical survey showing the brick facing on the east and south of the complex.

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SAGRAHAWA

1 The tank from which the site gets its name.
2 Row of seven stupas. It is from here that the carved bricks were recovered by Mukherji.
3 Row of small stupas.
4 Führer and Mukherji described this as an ancient stupa, with a connected structure of twelve rooms measuring 2.7 x 3.0 metre in size. It was almost completely destroyed by excavations but looks similar in size, shape and form to the cruciform temples at Kudan. From the centre a copper casket containing bones, two gold naga statues, and semi-precious stones were recovered.
5 Mukherji reported the presence of some small ruins here. Unfortunately, very little survives today.
6 Mukherji reported that there were two small stupas and a small building here.

Sagrahawa comprises of an expanse of large and small mounds, clustered around a water tank. Excavations in 1896 by Dr Führer from the Archaeological Survey of India exposed the remains of a large brick monument and smaller buildings at the western edge of the tank, as well as 17 small brick stupas to its southeast. The stupas were interpreted as commemorative of the deaths of the Sakyas – the people to which Lord Buddha's family belonged – during the destruction of Kapilavastu by Virudhaka, the King of Kosala during the lifetime of the Buddha.

Führer identified Sagrahawa as "the place of the massacre", visited by the Chinese pilgrim Xuanzang in the seventh century CE. Until recently, the site remained unexplored and the previously exposed monuments are now eroded and overgrown. Geophysical surveys of subsurface archaeological features in 2016 and 2018 identified a series of additional buried brick structures around the larger mound, indicating the presence of additional buildings, platforms or stupas, suggesting that this was a site of religious importance in the past.

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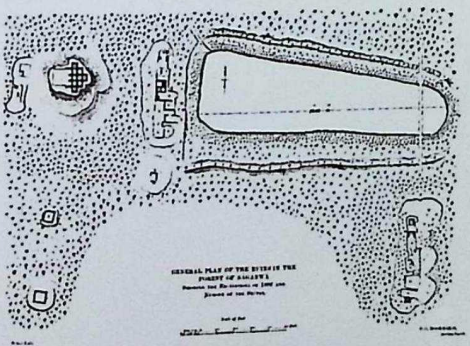
View over the Sagrahawa tank towards the east



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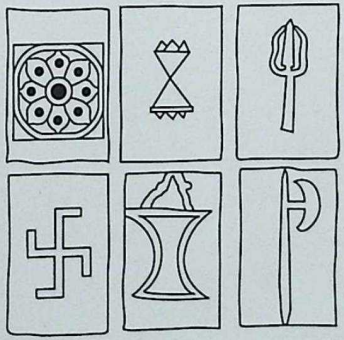
Mukherji's site plan dated 1898



Designs on the carved bricks found within the foundations (redrawn from Mitra 1972)

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KUDAN

1 The octagonal Hindu temple on this mound is about 200 years old and encases a much older shiva linga.
2 This small mound contained the remains of an unknown structure in the "last stage of decay" when Mitra excavated.
3 Temple 1 measures 42.3 x 31.8m and just over 4.5m in height.
4 The well, constructed from brick, was excavated by Mitra to a depth of 3.7 metres without encountering water.
5 Temple 2
6 The tank was probably created as clay was extracted for making bricks. Major Vost had suggested in 1906 that the tank was Hastigrata, where it is believed the elephant thrown by the Buddha landed.

Kudan means "to jump", referring to the local legend of a giant, who could jump from one mound to the next. The site was first identified by P.C. Mukherji in 1899, who recorded a row of four ancient mounds. In 1962 the site was excavated by Debala Mitra from the Archaeological Survey of India. She exposed two of the mounds, revealing large cruciform brick-built temples on either side of an ancient well. On the basis of the design of the exposed temple architecture and types of pottery, Mitra ascribed the construction of the temples to the seventh century CE, with later ninth century elaborations. Some scholars have suggested that Kudan may be the site of ancient Nigrodharama, the banyan grove where Gautama Buddha met his father several years after his departure from Kapilavastu, and where his son Rahul was ordained as a monk.

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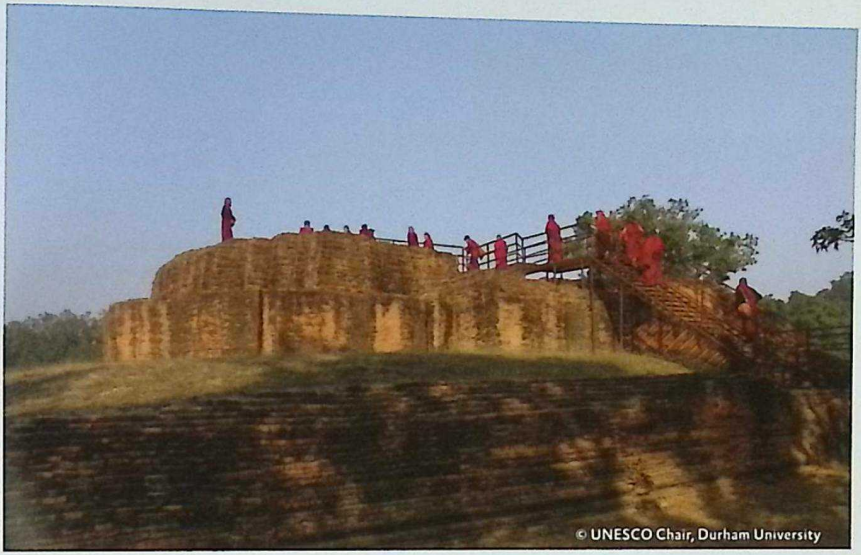
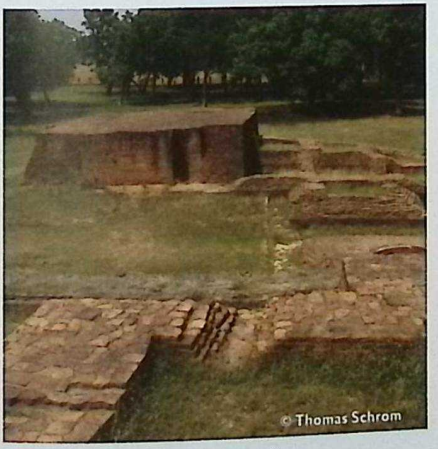


Monks visiting Temple 1



Temple 2, view from the south

Carved bricks along the side of Temple 1

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GOTIHAWA

1 The stupa originally measured 19.5 metres in diameter, and was later expanded to 21.5 metres. The early phase of the stupa was constructed using concentric rings of wedge-shaped bricks which had symbols inscribed on them. Later phases only used rectangular bricks.

2 A 3.2 metre long section of the pillar with a diameter of 79-83 cm remains. The part with the inscription is broken and its whereabouts unknown.

Ancient Gotihawa consists of a large brick stupa, the stump of an Asokan pillar and a water tank, nestled within a modern village. The site was first explored in the 1890s and the stupa was partially excavated by Major Waddell in 1898. Some early archaeologists believed that the monuments marked the birthplace of Krakkuchanda Buddha, one of the earlier Buddhas.

The stupa was re-excavated by the Italian archaeologist Giovanni Verardi in the 1990s, who identified two construction phases. The initial stupa measured 19.5 metres in diameter and was built with concentric rings of rectangular and wedge-shaped bricks, many of which were incised. The stupa was later expanded to 21.5 metres in diameter, however, the new brickwork comprised solely of rectangular bricks. Verardi attributed the initial construction to Asoka (third century BCE) with an expansion during the Kushan period (100 BCE – 300 CE). The excavations also provided evidence that the site had already been occupied before the stupa was built. Radiocarbon dates of 800 BCE and finds of proto-Northern Black Polished Ware indicate that it is contemporary with Lumbini's Village mound.

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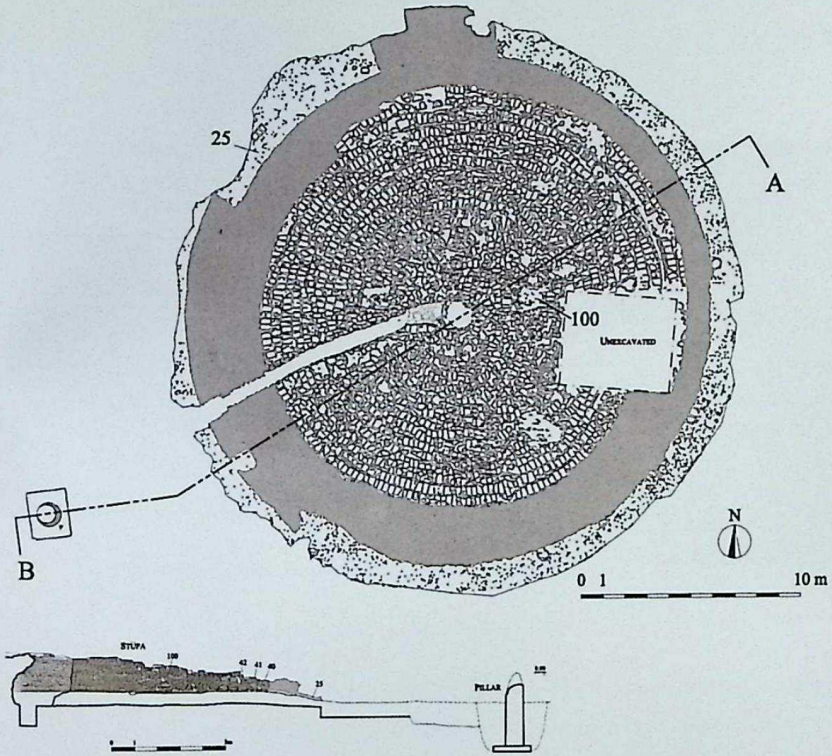

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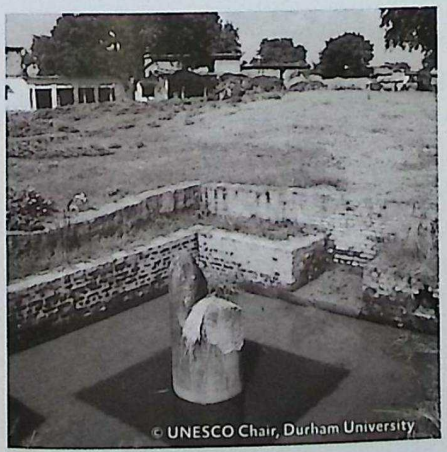
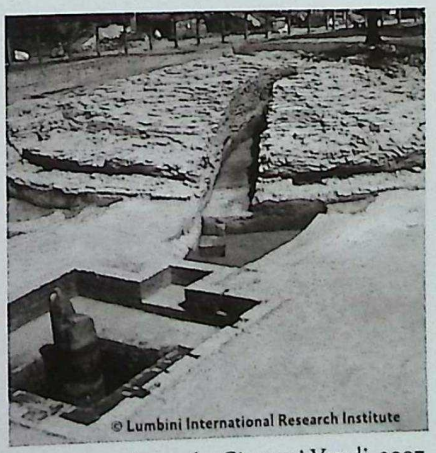
Plan and section by Giovanni Veradi, 2007



The Asokan pillar photographed in 1990



The excavated stupa by Giovanni Veradi, 2007

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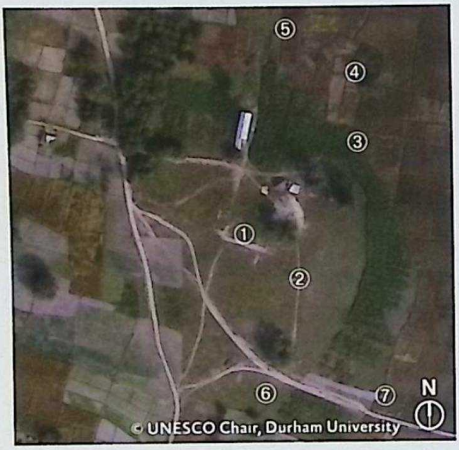
SISANIYA



1 Main Square. The geophysical survey showed an area of open space through which the main north-south road ran.
2 Below the surface are a series of buildings and small lanes.
3 Auger-coring showed the presence of a moat here.
4 No archaeological investigation of the stupa has been undertaken. It measures ten metres in diameter and two metres in height.
5 Buried below the fields is a brick-lined water tank.
6 Auger-coring picked up traces of occupation predating the town in this area.
7 Small mound 200m to the east.

Sisaniya comprises of a 260 metre long mound and a small circular mound 200 metres to its north. Excavations were first undertaken in 1899 by the Indian archaeologist P.C. Mukherji, who identified the foundations of a town with brick structures, mounds and a well. Further research undertaken by Debala Mitra of the Archaeological Survey of India in 1962 noted brick ruins on two sides of the mound, and concluded that the site dated back to at least the first century CE. In 1995, the Italian archaeologist Giovanni Verardi conducted a systematic collection of material on the surface of the mound, and dated Sisaniya's occupation up to the ninth century CE.

Geophysical surveys of subsurface archaeological features in 2016 and 2018 confirmed the presence of a large settlement of brick structures and open spaces, bisected by a north-south thoroughfare. It also showed the presence of a walled pond below the fields between the town and the northern mound, similar to ones identified around Tilaurakot's Eastern Monastery. This suggests that there may have been monastic complexes around the town in the past.

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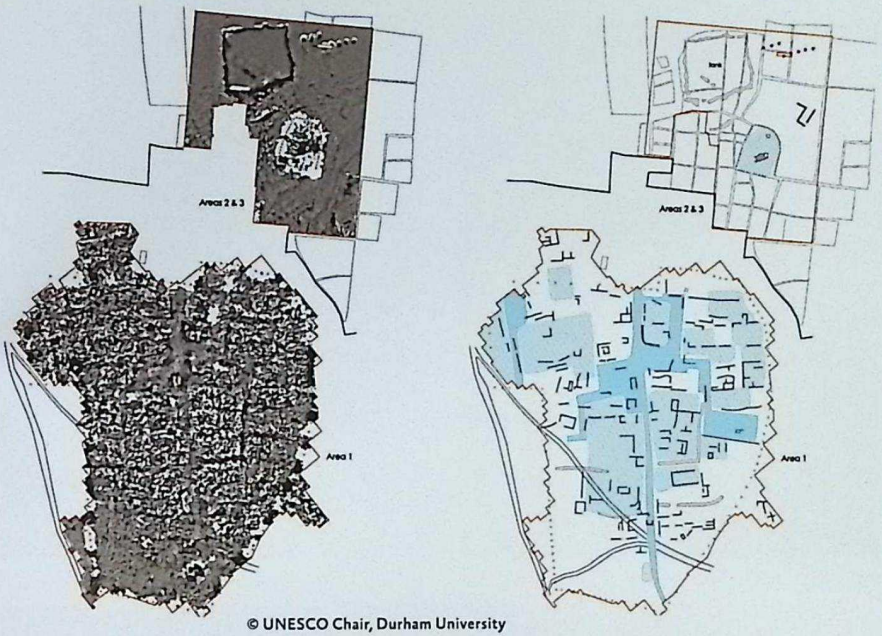

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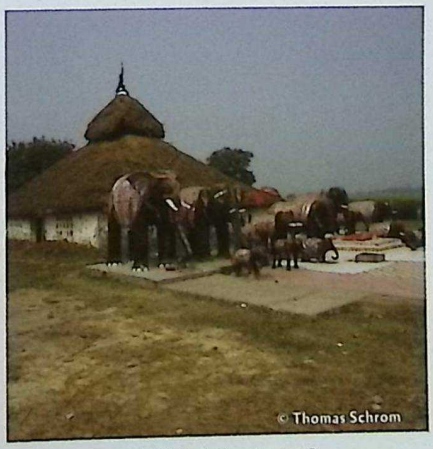
The results of the geophysical survey showing a grid-plan urban layout buried below the surface.

The thick blue areas represent the main streets; striped areas are areas of occupation; and the grey lines represent buried walls and structures.

A concrete elephant under construction in 2017



The new Samai Mai shrine in 2018

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RAMAGRAMA

1 The stupa measures 10m high and 23.5m in diameter. It is reputed to be one of the original eight nirvana stupas that was not reopened by the Emperor Asoka.
2 Farmers had called this the "unlucky field" as no crops would grow in it. When a geophysical survey was conducted, it identified a perfect quadrangular Kushan monastery buried below the surface.
3 Kushan Monastery. Further quadrangular cells were found in this area forming part of the wider Kushan monastery at the site.
4 A series of brick walls are visible on the surface in this area. Their function and form is unknown.

Ramagrama is on the tentative list for unesco World Heritage Status, and has attracted archaeological interest since 1896. The most striking feature of the site is its massive stupa, which is ten metres high and 23.5 metres in diameter. Referencing the itineraries of the Chinese pilgrims Faxian and Xuanzang, B.K. Rijial of Nepal's Department of Archaeology identified the stupa as Ramagrama, one of the original eight stupas that housed the cremated remains of Lord Buddha. Tradition records that the other seven stupas were reopened during the Mauryan period and their relics redistributed. It is believed that when Asoka went to open the stupa at Ramagrama, he was prevented from doing so by its guardian snake or *naga*.

Xuanzang carefully recorded this tradition as well as the presence of the stupa, a pillar and a temple, now at the centre of an island formed by an old oxbow of the Jharahi River and a modern canal. Geophysical surveys of subsurface archaeological features were conducted in 1997, 1999 and 2018. These identified the presence of several quadrangular brick monasteries and a water tank to the west and north of the stupa. Some of these structures were excavated by the late Sukra Sagar Shrestha of the DoA between 1999 and 2004. His research confirmed the site's establishment between the Maurayan and Gupta periods.

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View of the stupa from the west

The results of the geophysical survey showing monasteries and a large water tank buried below the surface to the north and west of the stupa.

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KUSHAN PERIOD WELLS

In addition to the construction of stopping points like Karma and Dohani for pilgrims, officials and traders moving between Lumbini and settlements to the west, other facilities were built. These include what must be a series of wells also constructed during the Kushan Period (c.100 BCE – 300 CE).

The first of these is located to the south-west of Lumbini's ancient Village Mound, *Lumbinigame*, and was discovered in the Nursery by B.K. Rijial in 1983. Re-excavated by the UNESCO-JFIT team in 2013, the well was found to have been constructed using specially-manufactured and marked bricks. These were formed by moulding rings of clay, which were then marked on their inner and upper faces and cut into individual bricks. In its original design the inner face markings indicated to which ring the individual bricks belonged and the upper markings indicated where each brick belonged within each ring. The shape of the cut formed each brick into a 'key stone' shape, thus providing the well with the strength to survive burial and subsequent re-excavation. The individual bricks were then fired and the resultant mixture of bricks sorted, transported and re-constructed according to the markings.

Dating of the site indicated a Kushan construction and earlier reports from Rijal indicated the recovery of Kushana-style vessels from within the well. The well probably provided a water source to both inhabitants of the adjacent Village Mound and pilgrims. The general absence of ceramic sherds within the vicinity, suggest that the area around it was kept swept and clean during its lifetime although there is evidence of a repair, during which many of the upper courses became mixed.

In 2013, the UNESCO-JFIT team noted that the distinctive manufacturing technique suggests that such wells were mass-produced, possibly on an imperial scale. Although this hypothesis is still unproven, the recent discovery of a similar example at Motipur by the Lumbini Development Trust just over nine kilometres west of Lumbini indicates that their assumption is correct and that there are many more such wells to be discovered in the GLA.

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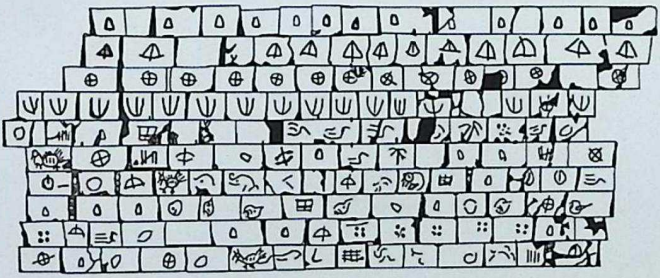
Excavating the Nursery Well at Lumbini, showing the marking system on their upper faces.



Elevation of the interior of the Nursery Well at Lumbini, showing the decorated bricks.

Krishna KC of the Lumbini Development Trust recording the Kushan well at Motipur.

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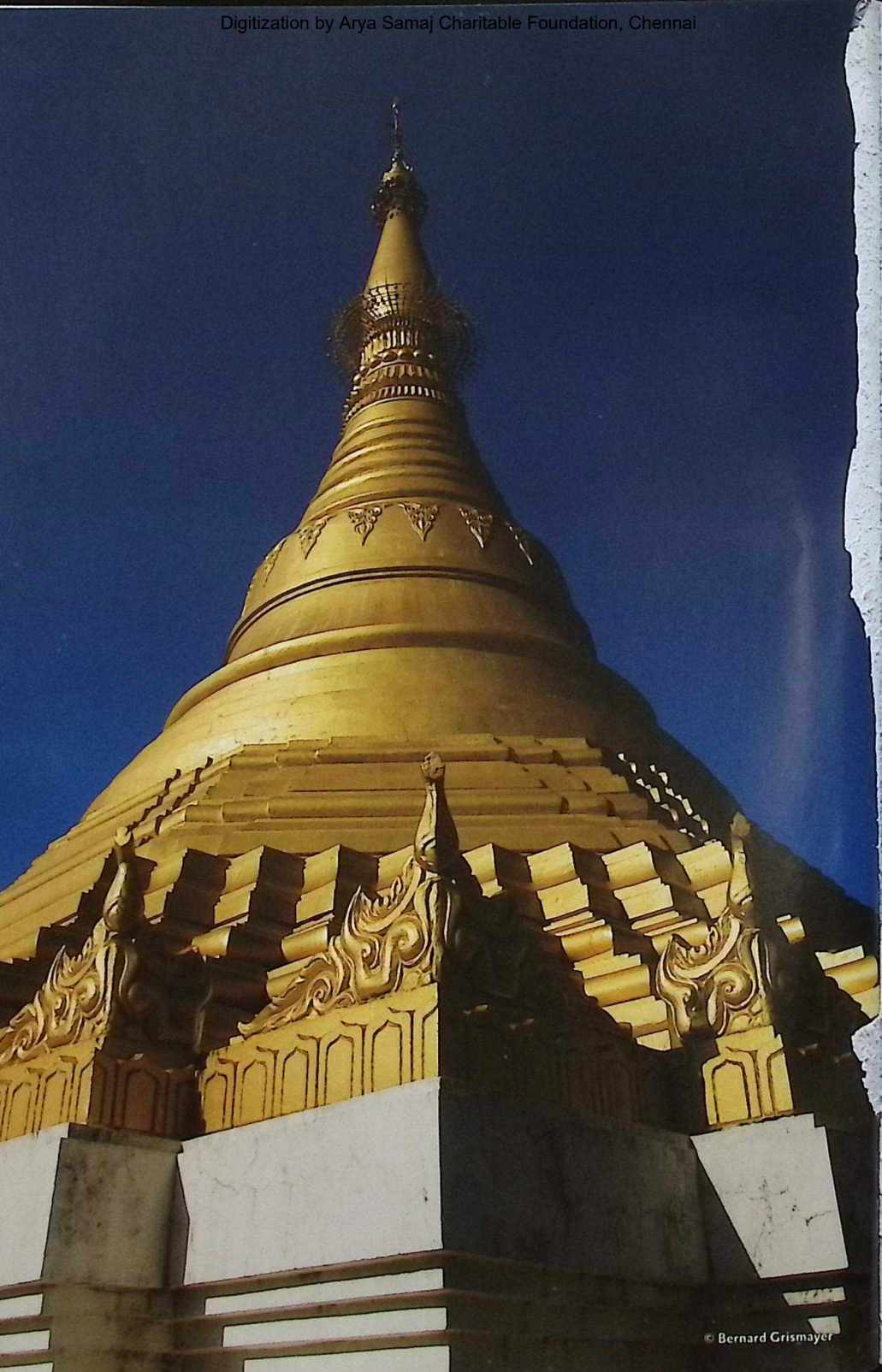

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Endnotes

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CHAPTER TWO

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CHAPTER THREE

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Digitization by Arya Samaj Charitable Foundation, Chennai

, p. 38

. 21

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